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POLYGRAPHS IN THE WORKPLACE: THE USE OF "LIE DETECTORS" IN HIRING AND FIRING

HEARINGS

BEFORE THE

SUBCOMMITTEE ON EMPLOYMENT OPPORTUNITIES

OF THE

COMMITTEE ON EDUCATION AND LABOR
HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

FIRST SESSION

ON

H.R. 1524

POLYGRAPH PROTECTION ACT OF 1985

H.R. 1924

POLYGRAPH CONTROL AND PRIVACY PROTECTION ACT OF 1985

HEARINGS HELD IN WASHINGTON, DC ON JULY 30, AND SEPTEMBER 18, 1985

Serial No. 99-42

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POLYGRAPHS IN THE WORKPLACE: THE USE OF "LIE DETECTORS" IN HIRING AND FIRING

TUESDAY, JULY 30, 1985

House of Representatives,
Subcommittee on Employment Opportunities,
Committee on Education and Labor,
Washington, DC.

The subcommittee met, pursuant to call, at 9:35 a.m., in room 210, Cannon House Office Building, Hon. Matthew G. Martinez (chairman of the subcommittee) presiding.

Members present: Representatives Martinez, Williams, Gunderson, Henry, and Jeffords.

Staff present: Eric P. Jensen, acting staff director; Paul Cano, legislative assistant; Genevieve Galbreath, chief clerk/staff assistant; and Patricia Kelly, staff assistant. Minority staff: Dr. Beth Buehlmann, Republican education staff director; Mary Gardner, Republican legislative associate; Daniel V. Yager, Republican associate labor counsel.

Mr. **Martinez**. I call this meeting to order.

This is a hearing of the Subcommittee on Employment Opportunities. In light of the recent publicity surrounding the rash of national security violations, the use of polygraph devices, better known as lie detectors, has once again come to the forefront of our attention.

The polygraph device measures the changes of one's pulse, blood pressure, and perspiration in response to a series of questions. These psychological responses purportedly indicate whether an individual is lying or telling the truth.

The use of the polygraph is controversial to say the least. Proponents of their use feel polygraphs are essential in protecting their business interests, while opponents argue that the polygraph has no validity and employer reliance on this device unfairly denies employment to honest individuals.

Of course, in determining whether the use of the polygraph in the workplace should continue, we must weigh the interests of both parties, employers and the employees alike. The right to privacy and due process dictates that we must carefully scrutinize the validity and effectiveness of the polygraph, and we must scrupulously protect the employees' right to fair employment opportunities. On the other hand, we must consider the interests of the employer. Employers also have the right to protect their business interests.

In the final analysis, the balance of equities and competing interests must be carefully and judiciously considered.

The use of the polygraph is a highly emotional issue. Today, we will look at both sides of the matter and hear from expert witnesses. In particular, we will look at two bills, H.R. 1524, introduced by my colleague on this subcommittee, the Honorable Pat Williams; and H.R. 1924, introduced by my colleague from Connecticut, the Honorable Stewart McKinney.

We welcome the testimony of our witnesses, and we thank them for coming here today.

With that I would like to ask Mr. Gunderson if he has an opening statement.

Mr. **Gunderson**. Thank you, Mr. Chairman. I guess I am going to make a couple of quick comments. I am going to begin with an apology to those in the audience. You are going to see me leave very quickly, and it isn't because I don't have an interest in this issue. I have an intense interest. However, the Agriculture Committee continues to struggle and labor in marking up the farm bill and, frankly, that is a life and death issue to my rural district and I do need to get over there for that. However, I can assure you that I am going to review your testimony very, very closely.

I hope that all of you would address one question for me during this session. I think the evidence is very convincing that polygraphs are not always accurate. The question I have, however, is should the Government prohibit business from using it if they want to? I would question any business that does, frankly, but, if they want to, is there a need for the Federal Government to come in and say, no, you have no option or no alternative to use it?

If you could address that question for me during the hearing today, it would be very helpful.

Thank you, Mr. Chairman.

Mr. **Martinez**. Thank you, Mr. Gunderson.

Mr. Jeffords.

Mr. **Jeffords**. I have no opening statement, Mr. Chairman, just that this is an extremely interesting issue to all of us and I look forward to the testimony.

Mr. **Martinez**. Thank you, Mr. Jeffords.

With that, we will hear a statement from one of the authors of one of the bills, Mr. Stewart McKinney. Would you like to begin?

STATEMENT OF HON. STEWART McKINNEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CONNECTICUT

Mr. **McKinney**. Thank you, Mr. Chairman. I would really like to congratulate you for having these hearings on the issue of polygraph testing in the workplace. A congressional forum on this issue is both welcome and overdue. I am pleased to have the opportunity to voice my opinion on the matter.

In 1978, as ranking member of the House Appropriations Committee, I witnessed firsthand evidence of the folly of the polygraph. During the course of an investigation of the assassination of Martin Luther King, Jr., the committee learned that suspect James Earl Ray earlier had taken two separate lie detection tests administered by different examiners, one for Playboy magazine and the other for a television report by columnist Jack Anderson. The committee convened a panel of polygraph experts, polygraph examiners themselves, to analyze the results of Ray's tests. The panelists found that some of the polygraph apparatus was not properly set, many questions were improperly worded, and that Ray, having studied lie detector techniques, was able to cheat by depressing his arm on the cardio cuff, giving false blood pressure readings. All of these factors affected the validity of the results. Most telling, the panelists themselves could not even agree on how the tests should have been administered or their interpretation after the results.

Mr. Chairman, since that demonstration of lie detector shortcomings, I became aware that polygraph testing is not limited to police and espionage matters, but abounds and flourishes in the private sector. In fact, each year over a million polygraph tests are administered in private industry, many more than judicial cases and Government operations combined. At least half of the retail trade firms and 20 percent of the major corporations require lie detection tests to hunt down dishonest employees or ferret our undesirable applicants. Department and chain stores such as Gimbels, Saks Fifth Avenue, Marshall Fields, K-Mart; banks such as Chase Manhattan and Chemical Bank; hotels such as Day's Inn; restaurants and fast food chains such as Arby's and Pizza Hut—all are major lie detector users. And the list goes on and on, and so do the problems associated with polygraph testing.

Mr. Chairman, I've repeatedly endeavored to focus congressional attention on the misuse of the polygraph and have introduced legislation in four Congresses, including my current measure, H.R. 1924, to prohibit its use in the private sector. Polygraph testing is an impingement upon one's right to privacy. It also is an inaccurate and undependable practice that proves nothing except that a person gets nervous when locked up in a room and hooked to a machine being interrogated.

It seems to me that one of the tenets of our Constitution is that a person is innocent until proven guilty. Yet, we allow thousands of Americans each year to be subjected to a mechanical ordeal which automatically places one's honesty and integrity on the defensive. Too often, innocent people are labeled as liars or social misfits. Consequently, potential employees, people who would like to be valuable and productive, are not hired, and current employees are needlessly fired. In addition, employees who fail the polygraph test often find that their alleged—and I underline the word "alleged"—deceptive or dishonest tendencies become part of their personnel record, hindering further employment.

Consider the case of Patricia, who had been working in a New York department store for 8 years in its cash room. It was discovered that money was being stolen on a regular basis, and all employees of the cash room were required to take the polygraph. Patricia failed the test, labeling her as the thief, and she was transferred to a different department. She would have been fired, but her manager believed her to be innocent despite the polygraph test.

Money continued to disappear from the cash room, and, finally, the store admitted its own and the polygraph's mistake. Patricia returned to her old position with a guarantee that no more polygraph tests would be given. But the thefts continued, and the company again decided to administer polygraph tests to all the cash room personnel. Patricia refused to undergo another trial by machine and she was fired.

Mr. Chairman, despite her innocence, Patricia was a marked person, unable to find a job elsewhere for several months due to her poor polygraph record. A humiliating experience. I cannot envision most people witnessing this hearing today allowing themselves to undergo such an ordeal.

I would be hard pressed to come up with such a seemingly harmless and ill-publicized practice as polygraph testing that adversely affects so many citizens. People's constitutional rights are being infringed upon, fair employment practices are being ignored, and not only does the practice of administering polygraph tests continue, it is increasing year by year.

The polygraph machine cannot detect lies. The machine simply measures physiological reactions such as heart and respiration rates and perspiration—reactions certainly not caused only by lying. These reactions may be affected by many factors, including nervousness, state of mind, moral attitude toward lying, physical handicap, the location of the testing, and the personality of the examiner. Magnifying the problem of polygraph inaccuracy is the highly subjective role of the examiner, who has complete control over the questioning process, then alone reads and interprets the responses.

Let me emphasize that controlling or regulating the lie detector business is not a plausible response. This would only legitimize the use of polygraph tests in the private sector. Instead, it must be eliminated entirely. Mr. Chairman, we must face the fact, as did 20 States, the District of Columbia, and most nations of the civilized world: The polygraph is an extremely suspect device having no place determining the quality and character of employees and applicants in private industry.

My bill, H.R. 1924, would prohibit the use of the polygraph in private industry, impose fines on those who violate the law, and allow aggrieved individuals to seek civil action on their own behalf or through an employee organization. Government employees would be exempt from the provisions of the bill. In addition, my bill would allow an exemption for the Department of Defense, the National Security Agency, and the CIA when contracting out to private industry for national defense and intelligence purposes.

Time and time again, studies conducted on the Federal level have stated the inaccuracy and unconstitutional qualities of the polygraph outweigh any sort of positive results. The Congressional Office of Technology Assessment in 1983, studying the scientific validity of polygraph testing, concluded that the percentage of innocent people being found deceptive is as high as 50 percent. In 1977, the President's Privacy Protection Study Commission already had concluded that the polygraph is, and I quote, "an unreasonable invasion of personal privacy that should be proscribed." The sober truth contained in this commission's advice should lead us to the same conclusion today. The polygraph is inaccurate, unreliable, and intrusive—an unreasonable infringement on a person's right to privacy and ability to earn a living. Let us end the use of the polygraph in the private sector.

Mr. Chairman, in closing, I would state that we will have some letters coming to the committee from corporations that do not use the polygraph and feel it is wrong. And I am not sure exactly who is going to answer yet, but, for instance, those who refuse to use it would be Sears, J.C. Penney, Rockwell, the Golden Nugget in Las Vegas, General Electric, Ford, et cetera.

Mr. MARTINEZ. Thank you, Mr. McKinney.

[The text of H.R. 1524 and H.R. 1924 follow:]

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99TH CONGRESS
1ST SESSION

H. R. 1524

To prevent the denial of employment opportunities by prohibiting the use of lie detectors by employers involved in or affecting interstate commerce.

IN THE HOUSE OF REPRESENTATIVES

MARCH 7, 1985

Mr. WILLIAMS (for himself, Mr. MARTINEZ, Mr. FORD of Michigan, Mr. KEMP, Mr. McKINNEY, Mr. HAYES, Mr. OWENS, Mr. DYMALLY, Mr. BOUCHER, Mr. MURPHY, Mr. TAUKE, Mr. LOWRY of Washington, Mr. COURTER, and Mr. EDWARDS of California) introduced the following bill; which was referred to the Committee on Education and Labor

---

A BILL

To prevent the denial of employment opportunities by prohibiting the use of lie detectors by employers involved in or affecting interstate commerce.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Polygraph Protection Act of 1985".

SEC. 2. PURPOSE.

It is the purpose of this Act to prevent the denial of employment opportunities based on the use of instrumentation designed to detect deception or verify truth of statement. This Act shall be construed to prohibit the use of all such instrumentation on employees, agents, prospective employees and prospective agents.

SEC. 3. PROHIBITIONS ON LIE DETECTOR USE.

No employer or other person engaged in any business in or affecting interstate commerce, nor any agent or representative thereof, shall—

(1) directly or indirectly require, request, suggest, permit or cause any employee, agent, prospective employee or prospective agent to take or submit to any lie detector test or examination for any purpose whatsoever;

(2) use, accept, or refer to the results of any lie detector test or examination of any employee, agent, prospective employee or prospective agent for any purpose whatsoever; or

(3) discharge, dismiss, discipline in any manner, or deny employment or promotion, or threaten to do so, to any employee, agent, prospective employee or prospective agent who refuses, declines, or fails to take or submit to any lie detector test or examination.

SEC. 4. NOTICE OF PROTECTION.

The Secretary of Labor shall prepare and have printed a notice setting forth information necessary to effectuate the purposes of this Act. This notice shall be posted at all times in conspicuous places upon the premises of every employer engaged in any business in or affecting interstate commerce.

SEC. 5. RULES AND REGULATIONS.

In accordance with the provisions of subchapter II of chapter 5 of title 5, United States Code, the Secretary of Labor shall issue such rules and regulations as may be necessary or appropriate for carrying out this Act.

SEC. 6. AUTHORITY OF THE SECRETARY OF LABOR.

The Secretary of Labor shall—

(1) make such delegations, appoint such agents and employees, and pay for such technical assistance on a fee for service basis, as he deems necessary to assist him in the performance of his functions under this Act;

(2) cooperate with regional, State, local, and other agencies, and cooperate with and furnish technical assistance to employers, labor organizations, and employment agencies to aid in effectuating the purposes of this Act; and

(3) make investigations and require the keeping of records necessary or appropriate for the administration of this Act in accordance with the powers and proce-

dures provided in sections 9 and 11 of the Fair Labor Standards Act of 1938 (29 U.S.C. 209 and 211).

SEC. 7. ENFORCEMENT PROVISIONS.

The provisions of this Act shall be enforced in accordance with the powers, remedies, and procedures provided in sections 11(b), 16, and 17 of the Fair Labor Standards Act of 1938 (29 U.S.C. 211(b), 216, 217). Amounts owing to a person as a result of a violation of this Act shall be deemed to be unpaid minimum wages or unpaid overtime compensation for purposes of sections 16 and 17 of the Fair Labor Standards Act of 1938 (29 U.S.C. 216, 217).

SEC. 8. NO APPLICATION TO GOVERNMENTAL EMPLOYEES.

The provisions of this Act shall not apply with respect to any individual who is employed by the United States Government, a State government, city, or any political subdivision of a State or city.

SEC. 9. DEFINITIONS.

As used in this Act—

(1) The term "person" means any natural person, firm, association, partnership, corporation, or any employee or agent thereof.

(2) The term "lie detector" includes but is not limited to any polygraph, deceptograph, voice stress analyzer, psychological stress evaluator, or any other device (whether mechanical, electrical, or chemical)

which is used, or the results of which are used, for the purpose of detecting deception or verifying the truth of statements.

(3) The term "employer" includes an employment agency.

SEC. 10. EFFECTIVE DATE.

The provisions of this Act shall take effect on the date of enactment, except for section 4, which shall take effect six months from the date of enactment.

99TH CONGRESS
1ST SESSION

H. R. 1924

To protect the rights of individuals guaranteed by the Constitution of the United States and to prevent unwarranted invasion of their privacy by prohibiting the use of polygraph equipment for certain purposes.

IN THE HOUSE OF REPRESENTATIVES

APRIL 2, 1985

Mr. McKINNEY introduced the following bill; which was referred to the Committee on Education and Labor

---

A BILL

To protect the rights of individuals guaranteed by the Constitution of the United States and to prevent unwarranted invasion of their privacy by prohibiting the use of polygraph equipment for certain purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Polygraph Control and Privacy Protection Act of 1985".

SEC. 2. (a) It shall be unlawful for any person engaged in any private business or other private activity in or affecting interstate commerce, or any individual acting under the authority of such person—

(1) to permit, require, or request any officer or employee employed by such person or any individual seeking employment in connection with such business or activity to take any polygraph test in connection with such officer's, employee's, or individual's services or duties or in connection with such officer's, employee's, or individual's application or consideration for employment;

(2) to deny employment to any individual, or to discharge, discipline, or deny promotion to any officer or employee employed in connection with such business or activity, or to threaten any such denial, discharge, or discipline by reason of such officer's, employee's, or individual's refusal or failure to submit to such requirement or request; or

(3) to accept or use the results of any polygraph test in connection with the services or duties of any officer or employee employed in connection with such business or activity, or in connection with any individual's application or consideration for employment in connection with such business or activity.

(b) This Act shall not apply to any person who enters into a contract with the Central Intelligence Agency, the National Security Agency, or the Department of Defense to perform functions for such agency or department related to intelligence, counterintelligence, or national security.

SEC. 3. (a) Whoever willfully violates or willfully attempts to violate this Act shall be fined not more than $1,000, or imprisoned not more than one year, or both.

(b) Whoever violates this Act shall be subject to a civil penalty, payable to the United States, of not more than $10,000.

SEC. 4. (a) Any individual who is aggrieved by a violation of this Act may bring a civil action on such individual's own behalf, or on behalf of such individual and others similarly situated, against the offending person in the appropriate United States district court and recover appropriate relief.

(b) With the written consent of any individual who is aggrieved by a violation of this Act, any appropriate employee organization may bring such a civil action on behalf of such individual, or may intervene in any such civil action.

SEC. 5. As used in this Act the term—

(1) "polygraph test" means any examination administered to an individual by mechanical, electrical, or chemical means to measure or otherwise examine the veracity or truthfulness of such individual; and

(2) "appropriate employee organization" means any organization (including any brotherhood, council, federation, union, or professional organization) made up

in whole or in part of employees and which has as a purpose dealing with an employer concerning the conditions and terms of employment of an individual against whom there is a violation of this Act.

SEC. 6. This Act shall take effect thirty days after the date of the enactment of this Act.

Mr. MARTINEZ. Thank you, Mr. McKinney.

Congressman McKinney, throughout your testimony you indicate that the polygraph is unreliable. In many cases because people are under stress, the device measures that stress and some readers of the polygraph would interpret this stress as a lie and it may not necessarily be so. Why in your bill do you exclude the Intelligence Agency, National Security Agency, Department of Defense? Wouldn't the same arguments apply there, that it is not that reliable? Is there a greater need for greater accuracy and security?

Mr. MCKINNEY. The chairman is entirely perceptive and is entirely right, and I wish I didn't have to exclude them. But I feel that in the pragmatics of American politics today and the spy cases—the Wilkinson case and others—that there just simply is no way that we could accomplish freeing the private sector of the polygraph if, in fact, we included the security agencies of the United States.

Mr. MARTINEZ. Thank you.

Mr. Gunderson.

Mr. GUNDERSON. I guess I would like to focus on this policy question that I asked. I happen to share your skepticism of polygraphs and the validity of their exams. What I question, however, is, and what I struggle with is what ought the role of the Federal Government be in determining what practices the private sector can or cannot use in hiring employees, in maintaining employees? I really struggle with that, Stu, and I have a lot of respect for you, so can you help me out?

Mr. MCKINNEY. Well, I think that the basic answer to that, Steve, is one of civil rights. I was a tire and automobile parts distributor before I came to this halcyon Hill here. And obviously, with thousands of automobile parts and everything else, I had a lot of theft and a lot of problems, but I still never would have resorted to that kind of invasion of someone's civil rights, which is the right to privacy, which is probably one of the most important rights we are assured under our Bill of Rights in our Constitution.

I have files full of questions that have been asked by people. Not only do I consider the polygraph to be inaccurate and suspect, but how do you answer some questions? A good one—I think it was the Alexandria Police Department: Have you slept in a motel with a woman recently? How do you answer it? You are not given the right to go on to a long expletive and say: Yes, I have with my wife when we were on a trip down Route 301 to Florida. And you are afraid to say yes, because then they will suspect you of carrying on in some hot pillow joint. So the person immediately is thrown into a sweat and a tremor and everything else, and they look suspect.

Now, a lot of people say, well, let us limit the questions that can be asked. But that is legitimizing, to my way of thinking, a machine that is, in essence, a measurement of body function, rather than truth or fiction.

Mr. GUNDERSON. Should this be left to the States? Twenty States have already taken action.

Mr. MCKINNEY. Twenty States have already done so, and the District of Columbia has, but I am afraid that it is just not something—I have to tell you this bill was given to me by my near and dear friend when he left this body to become mayor of New York, Ed Koch, and I have been struggling with it ever since, and it is hard enough to get this body to listen to it. And I don't know how much—I think that the State legislatures are more susceptible to the pressure that would be brought on them by those industries that do use the polygraph and by those people who practice the profession.

Mr. **Gunderson**. Thank you. Thank you, Mr. Chairman.

Mr. **Martinez**. Thank you, Mr. Gunderson.

Mr. Jeffords.

Mr. **Jeffords**. Thank you, Mr. Chairman. I just really want to follow one line of questioning. I have the skepticism that others have expressed.

But there is a feeling among some industries, especially where a person may be in a position where they could create bodily harm such as guards, security guards or people, perhaps, involved in the handling of drugs, et cetera, that there ought to be exceptions for those kinds of industries. Of course, if you go under the presumption that the polygraph is totally inaccurate, then of course you would say you don't need any exceptions. But if you do take the position that it can at least in some cases ascertain the truth or veracity of an individual such that it might end up protecting the public from harm, does it have any utility?

Mr. **McKinney**. This is an argument that is used by the drug industry, several of which are located in my district. But what I try to say to them is aren't you really just using the polygraph to exempt yourself from poor management practices? If, in fact, you are running your business, you are running it so that you know whether or not things are being stolen; and the minute you find out, then, you can move to correct it.

A polygraph is not going to protect the drug company. What if an employee of a drug company, say, making amphetamines is blackmailed by a threat on one of his children or something and is told to steal them? You are not going to know at the case in point whether or not that has happened and so it is going to be stolen anyway.

It seems to me that the polygraph is used by some corporations simply because they are sloppy managers and they don't have control over their business. With the computer today, I would know damn well who is stealing what in a hurry, if I were back. I wish the computer had been in existence when I had my parts business.

Mr. **Jeffords**. Do you feel, then, that if we do pass a law, we ought to supersede the States that have made exceptions for the use of the polygraph?

Mr. **McKinney**. I would have to leave that up to the wisdom of the committee. I just want to have a Federal policy that in fact private use of the polygraph is an infringement of the civil rights of the individual to privacy.

Mr. **Jeffords**. Thank you, Mr. Chairman.

Mr. **Martinez**. Thank you, Mr. Jeffords.

Just one additional question along the lines of the last question Mr. Jeffords asked about superseding the States. Isn't it true that they are not uniform in their laws, and there must be some uniformity in this?

Mr. McKinney. No; I don't think they are uniform at all, and what I normally suggest, and it is just a suggestion—it certainly is—is that the Federal Government set in the basic minimum and if States want to go above that, fine.

Mr. Martinez. Thank you, Congressman McKinney.

Joining us now is Pat Williams, a member of the subcommittee. Do you have any questions, Mr. Williams?

Mr. Williams. No questions inasmuch as I just arrived.

Mr. Martinez. I thank you, Mr. Williams.

Thank you, Congressman McKinney.

Mr. McKinney. Thank you, Mr. Chairman, and members of the committee; I appreciate the chance. I hope we can go somewhere with this thing.

Mr. Martinez. I do, too.

Mr. Martinez. At this time I would like to allow Mr. Williams, who has joined us just a little bit late, to make an opening statement.

Mr. Pat Williams. Thank you very much, Mr. Chairman. I apologize for being late. I wanted to join my colleague at the witness table, but I appreciate your kindness in allowing me to make my statement both as a witness and a member of this subcommittee.

"There is no lie detector; neither machine nor human. People have been deceived by a myth that a metal box in the hands of an investigator can detect truth or falsehood." That is not my conclusion. That was the conclusion of a report by a subcommittee of the House Government Operations Committee more than 20 years ago.

Americans are today subjected to more than 1 million lie detector examinations each year, and Government offers no protection whatsoever. None. American courts restrict the use of polygraph tests as evidence in trials. It is not allowed in our system of justice. Why? Because the statement of 20 years ago is correct.

It is sadly ironic that criminals cannot be convicted by a polygraph but workers can be denied jobs by a polygraph. It is hard to understand why we do not give the average worker in America the same dignity and protection routinely granted an indicted suspect in criminal proceedings.

As former Senator Sam Ervin once said—quoting now:

> A "lie detector" test to innocent citizens simply wanting a job reverses our cherished presumption of innocence. If an employee refuses to submit to the test, he is automatically guilty. If he submits to the test, he is faced with the burden of proving his innocence.

The problem of polygraph testing in the workplace has been treated as a constitutional issue, a privacy issue, a civil rights issue—and surely it is all of those. But it is first and foremost in my mind a jobs issue, an employment opportunities issue. Polygraphs have become vehicles for employee intimidation and for screening out employees of political or union beliefs different from those of a particular manager.

The greatest number of polygraph tests are administered by private employers, and they are responsible for more polygraph examinations every year than either criminal justice investigators or the Federal Government. According to the American Polygraph Association, one-fourth of all major corporations now use the polygraph. But in a survey of 400 major U.S. corporations, Belt and Holden of the Wichita State University College of Business Administration has found that 20 percent of all respondents used the polygraph. Belt and Holden also found that half of the retailers and commercial banks that responded to the survey use polygraphs. The list of businesses that subject their employees to polygraph examinations covers the whole spectrum of American business: electronic and chemical companies; drug and liquor manufacturers, hospitals and doctors' offices, copper refiners, rubber manufacturers, delivery companies, steel producers, freight movers, meat packers, and food and oil processors.

In most workplaces in our country today, employers can polygraph workers for any reason: to verify employment applications, for periodic surveys of employee honesty, to find out why merchandise is missing, or perhaps—just perhaps—for intimidation.

Given the extensive and indiscriminate use of polygraphs by private sector employers, one should question whether these machines can in fact detect lies. And on that question, the weight of serious scientific evidence is against the polygraph, particularly as it is used in the workplace. For example, private employers use polygraphs extensively to screen job applicants and to screen large numbers of employees during investigations of suspected theft. However, the Congressional Office of Technology Assessment [OTA] has determined that the mathematical chance of false positivess—that is, incorrectly classifying an innocent person as being deceptive—is highest precisely when the polygraph is being used for that specific purpose.

In a comprehensive evaluation of the scientific validity of polygraph testing published in November 1983, the Office of Technology Assessment concluded this:

> There is little research or scientific evidence to establish polygraph test validity in screening situations, whether they be pre-employment, preclearance, periodic or aperiodic, random or "dragnet."

In other words, there is no scientific evidence that the machines work, especially as they are used by employers, and yet people are being denied and are losing their livelihoods based on the results of these tests. In fact, it is estimated by some that at least 50,000 workers are wrongfully denied employment every single year, either because they refuse to take the test or because of the inherent inaccuracies of the machines or the incompetence of the operators.

We are a society that has become numb to statistics, so it may be easy for some Americans to shrug off the fact that a million of their fellow citizens are polygraphed every year or perhaps 50,000 of them lose or are denied jobs because of the misuse of polygraphs. But if you are one of the million or you are one of the 50,000 whose job is lost or denied or whose life is damaged, you don't shrug off that one statistic.

Last week I received a letter from a woman who had lost her job after failing a polygraph test. Let me, Mr. Chairman, share with you and our friends part of the text of that letter.

> I was as naive as the rest of the world about the test—I took it, in fact, just to prove my innocence. Never occurred to me to think I'd fail it or that the test was fallible.

> The polygrapher, let me emphasize, did everything right by the book. He made sure to get in all the control questions, he made sure I was completely at ease. I was not at all nervous, nor did it even occur to me that the test would indicate that I was lying. I was flabbergasted when the polygrapher informed me that I was. I persuaded him to re-do the test twice; didn't help—I failed consistently.
>
> Ironic: I "failed" a polygraph test during which I did not lie; now I must lie for the rest of my career about my employment history . . . and that, in most cases, can become grounds for termination of my employment. It's a conscious decision on my part to falsify this part of my employment history—I look at it as the lesser of two evils, the other "evil" not being considered at all for a job simply because of the fact that I've admitted to "failing" a polygraph.
>
> My personal opinion,

She says—

> Is that the lie-detector will only be banned when enough people have been victimized that by sheer numbers they'll be heard.

That is the end of that letter, and the woman asked me not to divulge her name for fear that the stigma of failing a polygraph test could cause her any further harm.

Even well-meaning employers, and the vast majority in this country are well-meaning, have I think been duped into believing that the polygraph is an acceptable, fast, cheap and easy method of checking employment applications or controlling employee theft. The polygraph may be a dreaded machine to American workers, but to their employers it is simply a tool of convenience.

It is possible, clearly possible to run a profitable business, even a retail business, without resorting to polygraphs. J.C. Penney does it. Sears does it. There are many other businesses, equally renowned, that do not use polygraphs. Those companies know it is possible, and even preferable, to make employment decisions and protect company assets by using less objectionable methods such as good recordkeeping, employee discounts for company products, a healthy organizational climate, good management, and a loss prevention system that does not abuse employees. Likewise, employers can make effective employment decisions with careful interviewing procedures, clearly stated job requirements, and testing for specific job skills and talents.

Twenty-two States and the District of Columbia have limited lie detector examinations in the workplace, and yet the number of employees and job applicants who must submit to these tests continue to grow. State statutes speak eloquently of the desire of State legislators to protect employees, and those who seek employment, from the indignities and dangers of the so-called lie detector. But these State prohibitions and restrictions are inherently inadequate. Many employers skirt State law by simply hiring in a neighboring State that doesn't have any restrictions, and then they transfer the employee into the State which has the lie detector restrictions. Chain stores which operate in more than one State find it particularly easy to avoid those State laws. This simple circumvention of State laws can only be stopped one way—one way—Federal legislation. Otherwise, employers who are intent on subjecting their employees and prospective employees to polygraphs and other lie detectors will continue to find it a simple and inexpensive proposition to evade the law by merely stepping across a State border.

Other States have tried to control the abuse of polygraphs in the workplace by licensing the operators of the machines. But licensing laws are counterproductive if the goal of the legislators is to protect citizens from abuse at the hand of the lie detectors.

Licensing requirements cannot ensure the validity of the examinations. The danger and the irony of polygraph licensing is that it legitimizes the machines, their operators, and the entire pseudo-scientific process. In fact, a survey reported in Personnel Journal in February 1978, found that more businesses use the polygraph in States with licensing requirements than in States with no regulation at all. Clearly, licensing statutes thwart the best intentions of their supporters. They begin as efforts to protect people and yet, in my judgment, end up resulting in even greater abuse.

Three months ago I introduced a bill to prevent the denial of employment opportunities caused by the use and abuse of these so-called lie detectors. That bill, H.R. 1524, has been cosponsored by a bipartisan group of more than 150 Members of the House of Representatives.

The bill is straightforward. It would simply prohibit the use of all types of so-called lie detectors by private sector employers involved in interstate commerce, both for preemployment testing and testing in the course of employment. The bill does not affect the use of polygraphs by any level of government, whether Federal, State, county, or municipal. So, for example, the bill would not in any way impede law enforcement authorities from using the polygraph for the investigation of a crime.

I believe the time has come to ban these machines from America's workplaces. Jobs are too important and for too long they have been too scarce to be lost through these intrusive, intimidating, and inaccurate gadgets. I look forward to these hearings, Mr. Chairman, so that we can hear from people who know about the issue and the problem of polygraphs first hand: from my colleagues who have worked on the polygraph issue for many years; from citizens who have been victimized by the gadgets; from labor leaders whose members must face these gadgets every day when they go to work in America's grocery stores, restaurants, factories and offices; from experts who have studied the machines; and from the polygraphers who administer the examinations and the employers who use them.

And at this time, Mr. Chairman, I would like to submit a copy of a section-by-section analysis of H.R. 1524 for the record.

I thank you for your patience and the time.

Mr. MARTINEZ. If there is no objection, so ordered.

[Prepared statement of Hon. Pat Williams, and an analysis of H.R. 1524 follow:]

PREPARED STATEMENT OF HON. PAT WILLIAMS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MONTANA

"There is no lie detector; neither machine nor human. People have been deceived by a myth that a metal box in the hands of an investigator can detect truth or falsehood." That was the conclusion of a report by a subcommittee of the House Government Operations Committee more than twenty years ago.

Americans are today subjected to more than one million polygraph exams every year, and government offers them no protection whatsoever. American courts restrict the use of polygraph test results as evidence in trials. It is sadly ironic that criminals cannot be convicted by a polygraph, but workers can be denied jobs, shamed and branded forever by these same devices. It is hard to understand why we do not give the average employee the same dignity and protection routinely granted an indicted suspect in criminal proceedings. As former Senator Sam Ervin once said: "A 'lie detector' test to innocent citizens simply wanting a job reverses our cherished presumption of innocence. If any employee refuses to submit to the test, he is automatically guilty. If he submits to the test, he is faced with the burden of proving his innocence."

The problem of polygraph testing in the workplace has been treated as a Constitutional issue, a privacy issue, and a civil rights issue. It is all of these—but it is first and foremost an employment opportunities problem. Polygraphs have become vehicles for employee intimidation, and for screening out employees of political or union beliefs different from those of a particular manager.

The greatest number of polygraph tests are administered by private employers, and they are responsible for more polygraph examinations every year than either criminal justice investigators or the Federal Government. According to the American Polygraph Association, one-fourth of all major corporations use the polygraph. And in a survey of four hundred major U.S. corporations, Belt and Holden of the Wichita State University College of Business Administration found that twenty percent of all respondents used the polygraph. Belt and Holden also found that half of the retailers and commercial banks who responded to the survey use polygraphs. The list of businesses that subject their employees to polygraph examinations covers the whole spectrum of American business: Electronic and chemical companies; drug and liquor manufacturers; hospitals and doctors' offices; copper refiners; rubber manufacturers; delivery companies; steel producers; freight movers; meat packers and food and oil processors.

In most workplaces in our country today, employers can polygraph workers for any reason: to verify employment applications; for periodic surveys of employee honesty; to find out why merchandise is missing; or perhaps just for intimidation.

Given the extensive and indiscriminate use of polygraphs by private sector employers, one should question whether these machines can in fact detect lies. And on that question, the weight of serious scientific evidence is against the polygraph, particularly as it is used in the workplace. For example, private employers use polygraphs extensively to screen job applicants and to screen large numbers of employees during investigations of suspected theft. However, the Congressional Office of Technology Assessment (O.T.A.) has determined that the mathematical chance of false positives (that is, incorrectly classifying an innocent person as deceptive) is highest precisely when the polygraph is used for such purposes.

In a comprehensive evaluation of the scientific validity of polygraph testing published in November of 1983, O.T.A. concluded that: "there is very little research or scientific evidence to establish polygraph test validity in screening situations, whether they be pre-employment, pre-clearance, periodic or aperiodic, random, or 'dragnet' ". In other words, there is no scientific evidence that the machines work, especially as they are used by employers, and yet people are being denied and losing their livelihoods based on the results of these tests. In fact, it has been estimated that at least 50,000 workers are wrongfully denied employment every year, either because they refuse to take the tests or because of the inherent inaccuracies of the machines and their operators.

We are a society that has become numb to statistics, so it may be easy for some Americans to shrug off the fact that a million of their fellow citizens are polygraphed every year, or that 50,000 workers lose or are denied jobs because of the misuse of polygraphs. But to the individuals who lose their jobs and whose lives are damaged, the cost cannot be shrugged off very easily.

Last week I received a letter from a woman who had lost her job after failing a polygraph test. Let me read to you from her letter:

"I was as naive as the rest of the world about the test—I took it, in fact, just to prove my innocence. Never occurred to me to think I'd fail it or that the test was fallible.

"The polygrapher, let me emphasize, did everything right by the book. He made sure to get in all the control questions, he made sure I was completely at ease. I was not at all nervous, nor did it even occur to me that the test would indicate that I was lying. I was flabbergasted when the polygrapher informed me that I was. I persuaded him to re-do the test twice; didn't help—I failed consistently.

"Ironic: I 'failed' a polygraph test during which I did not lie; now I must lie for the rest of my career about employment history . . . and that, in most cases, can become grounds for termination of my employment. It's a conscious decision on my part to falsify this part of my employment history—I look at it as the lesser of two evils, the other 'evil' not being considered at all for a job simply because of the fact that I've admitted to 'failing' a polygraph.

"My personal opinion is that the lie-detector will only be banned when enough people have been victimized that by sheer numbers they'll be heard."

That woman asked me not to divulge her name, for fear that the stigma of failing a polygraph test could cause her any further harm.

Even well-meaning employers have been duped into believing that the polygraph is an acceptable, fast, cheap and easy method of checking employment applications or controlling employee theft. The polygraph may be a dreaded machine to American workers, but to their employers it is simply a tool of convenience. It is clearly possible to run a profitable business, even a retail business, without resorting to the polygraph—J.C. Penny and Sears, are among the many businesses which do not use polygraphs. Those companies know it is possible and even preferable to make employment decisions and protect company assets by using less objectionable methods such as good recordkeeping, employee discounts for company products, a healthy organizational climate, good management, and loss prevention systems that do not abuse employees. Likewise, employers can make effective employment decisions with careful interviewing procedures, clearly stated job requirements, and testing for specific job skills and talents.

Twenty-two states and the District of Columbia have limited lie detector examinations in the workplace, and yet the number of employees and job applicants who must submit to these tests continues to grow. State statutes speak eloquently of the desire of state legislators to protect employees, and those who seek employment, from the indignities and dangers of so-called "lie detectors". But these state prohibitions and restrictions are inherently inadequate. Many employers skirt state law by simply hiring in a neighboring state with no restrictions, and then "transferring" the employee into the state which has lie detector restrictions. Chain stores which operate in more than one state find it particularly easy to evade these state laws. This simple circumvention of state laws can only be stopped with Federal legislation. Otherwise, employers who are intent on subjecting their employees and prospective employees to polygraphs and other "lie detectors" will continue to find it is a simple and inexpensive proposition to evade the law merely by crossing state borders.

Other states have tried to control the abuse of polygraphs in the workplace by licensing the operators of the machines. But licensing laws are counterproductive if the goal of legislators is to protect citizens for abuse at the hand of "lie detectors". Licensing requirements cannot ensure the validity of the examinations. The danger and the irony of polygraph licensing is that it legitimizes the machines, their operators, and the entire psuedo-scientific process for "lie detecting". In fact, survey reported in Personnel Journal in February, 1978, found that more businesses use the polygraph in states with licensing requirements than in states with no regulation at all. Clearly, licensing statutes thwart the best intentions of their supporters. They begin as efforts to protect people and yet result in even greater abuse.

Three months ago I introduced a bill to prevent the denial of employment opportunities caused by the use and abuse of these so-called "lie detectors". That bill, H.R. 1524, has been cosponsored by a partisan group of over 150 members of the House of Representatives.

H.R. 1524 is very straightforward. It would simply prohibit the use of all types of so-called "lie detectors" by private sector employers involved in interstate commerce, both for pre-employment testing and testing in the course of employment. This bill does not affect the use of polygraphs by any level of government, whether federal, state, county or municipal. So, for example, HR. 1524 would not in any way impede law enforcement authorities from using the polygraph in the investigation of a crime.

I believe the time has come to ban these machines from America's workplaces. Jobs are too important and too scarce to be lost because of these intrusive, intimidating and inaccurate machines. I look forward to these hearings so that we can hear from people who know about the issue and the problem of polygraphs first hand—from my colleagues who have worked on the polygraph issue for many years; from citizens who have been victimized by the machines; from labor leaders whose members must face these machines every day when they go to work in America's grocery stores, restaurants, factories and offices; from exports who have studied the machines; and from the polygraphers who administer the examinations and the employers who use them.

At this time, I would like to submit a copy of a section by section analysis of H.R. 1524 for the record.

SECTION-BY-SECTION ANALYSIS OF H.R. 1524, THE POLYGRAPH PROTECTION ACT OF 1985

H.R. 1524 was introduced March 7, 1985 by Representative Williams, with thirteen original cosponsors (nine Democrats, four Republicans). It currently has [151] cosponsors.

The bill received single Committee referral to the Education and Labor Committee, then to the employment opportunities subcommittee.

Section 1 cites the short Title of the bill as the "Polygraph Protection Act of 1985".

Section 2 describes the purpose of the bill. The purpose is to prevent the denial of employment opportunities caused by the use of instruments designed to detect deception or verify truth, popularly known as "lie-detectors". The underlying rationale for this prohibition is the demonstrated inaccuracy of the machines and testing procedures as used in the private sector, and the resulting significant loss of employment to those subjected to so-called "lie detector" tests.

Section 3 specifically states the practices and uses prohibited by the bill. Basically, an employer would not be allowed to require, request, suggest, or cause an employee or prospective employee to take a "lie detector" examination.

Nor could an employer use or refer to the results of a "lie detector" test.

Finally, an employer would not be able to fire, discipline, or deny employment or promotion (or threaten such action) to any employee who refuses or fails to submit to any "lie detector" examination.

Section 4 requires the Secretary of Labor to prepare a notice setting forth employee rights under this legislation, and such notice shall be required to be posted upon an employer's premises, just as FLSA rights are posted in the workplace. The thrust of this bill is not to punish employers who administer "lie detector" examinations but rather to prohibit the practice, and to inform workers that an employer cannot ask them to submit to such testing.

Section 5 provides that the Secretary of Labor shall issue any necessary or appropriate rules and regulations for carrying out the Act.

Section 6 states what the duties of the Secretary would be under the Act. The Secretary is required to make whatever delegations and appointments necessary to carry out his duties under the Act, and pay for necessary technical assistance.

The Secretary would also be required to cooperate with state and local agencies, employers and labor organizations in collecting and disseminating information and data necessary to effectuate the purposes of the Act.

Finally, the Secretary would be required to make investigations and keep necessary or appropriate records for the administration of the Act, in accordance with the powers and procedures provided in sections 9 and 11 of the FLSA. Sections 9 and 11 of the FLSA grant the Secretary of Labor the requisite authority for the production of witnesses, books, papers and documents necessary for carrying out hearings and/or investigations.

Section 7 provides that the Act shall be enforced in accordance with the powers, remedies and procedures provided in sections 11(b), 16 and 17 of the FLSA. Amounts owing as a result of violation the Act would be treated as unpaid minimum wages or overtime compensation for the purposes of sections 16 and 17 of the FLSA.

This does not mean the plaintiff will be limited to minimum wage levels of compensation. But the amounts of back pay shall be treated as such, just as age discrimination enforcement and litigation. Under section 16 of the FLSA, the aggrieved individual has a cause of action in any federal or state court of competent jurisdiction, terminable upon filing by the Secretary of Labor for injunctive relief under section 17 of the FLSA. Section 17 provides federal courts with jurisdiction for injunctive actions by the Secretary of Labor to restrain violations or the withholding of amounts owed to any employee.

Section 8 provides that the Act shall not apply to public employees, whether federal, state, local, or municipal. Federal employees have civil service protections, and public sector requirements of polygraph tests have been found by some courts to be state action violative of the individual's constitutional rights. By far the worse abuse and greatest use of these devices is in the private sector, and this Act is designed to prohibit only private sector use of "lie detectors".

Section 9 provides some basic definitions. "Person" is defined broadly to include natural persons, all forms of business entities, and their employees and agents.

"Lie detector" is defined both by specific trade usage names and more generally as any mechanical, electrical, or chemical device which is used for the purpose of detecting deception or verifying truth of statements. This is a broad definition, but necessary to encompass new devices created in the future which purport a capactiy to distinguish truth from deception.

"Employer" is defined to include an employment agency so the intent of the Act cannot be subverted by contracting out "lie detector" testing to employment agencies.

Section 10 provides for the Act to take effect on the date of enactment, except for section 4 (requiring that the Secretary of Labor prepare notice for posting) which would take effect six months from the date of enactment.

Mr. MARTINEZ. You offered an opening statement and testimony on the bill, so I am going to ask you a question.

Many law enforcement agencies throughout the country actually use polygraph tests in hiring officers for their forces. Would this exempt them?

Mr. PAT WILLIAMS. It does exempt them, Mr. Chairman.

Mr. MARTINEZ. With that, I would like to announce we have many witnesses today on these two bills, so I would like to say that we are going to hold panels to 5 minutes each and we are going to hold the members of the committee to a 5-minute questioning period. If you look up here, you will see green and red lights. We will start the green light at the start of the testimony, and when you see the red light go on, please summarize.

Your written testimonies will be entered into the record in their entirety.

With that, I would like to announce the first panel: Walter Stanley, Jeweler's Workbench; Norma Rollins, director of the privacy project, New York Civil Liberties Union; Anthony Lutty, international secretary-treasurer, United Food & Commercial Workers International Union; Robert Harbrant, president, Food & Allied Service Trades Department, AFL-CIO.

With that, we would like to start with Walter Stanley.

STATEMENTS OF WALTER PACKARD STANLEY III, JEWELER'S WORKBENCH; NORMA ROLLINS, DIRECTOR, THE PRIVACY PROJECT, NEW YORK CIVIL LIBERTIES UNION; ANTHONY LUTTY, INTERNATIONAL SECRETARY-TREASURER, UNITED FOOD & COMMERCIAL WORKERS INTERNATIONAL UNION; ROBERT F. HARBRANT, PRESIDENT, FOOD & ALLIED SERVICE TRADES DEPARTMENT, AFL-CIO

Mr. STANLEY. My name is Walter Packard Stanley III. I am a jeweler from Bangor, ME. I would like to talk to you about my experiences with polygraph examinations in the workplace.

I would like to tell you that I am an honorably discharged Vietnam-era veteran and a charter member of the Republican Presidential Task Force in good standing. While in the service I was granted a top secret background investigation clearance to work with the Lance missile system, as a launcher specialist. Since this period of duty to my country I have been actively involved in the jewelry business.

While having been in the jewelry business most of my adult life, I have worked with importers, wholesalers, and retailers. While some of the jobs I have had in the business required a polygraph examination, others did not.

I am outraged at the fact that the jewelry industry is trying to exclude themselves from a prohibition of polygraph examinations in the workplace. I do not feel that they should be excluded.

While I had a territory of 48 States and traveled with a gold line consisting of hundreds of 14-carat mountings and loose stones, I was never given a polygraph test as part of the application process at any during my term of employment. But while working in the retail store, I found the polygraph to be commonplace. When applying for a retail position, the polygraph is part of the interview process.

In the wholesale jewelry industry most of the salesmen are inventoried once a year, but the retail stores are done mostly on a quarterly basis. In the retail setting the merchandise is taken out of the cases and stored overnight in a vault and replaced daily. A good manager takes mental inventory daily. You may ask yourself why, with so many security precautions that are employed in the retail setting, are polygraph examinations necessary? I do not believe that as for an application for a job you should be subjected to a polygraph examination with all the daily security precautions that are already employed.

If, in fact, I can carry a wholesale line of jewelry into a retail store to sell them mountings and not take a polygraph, why, then, when working in the retail store selling to the retail customers the same mountings I sold to them wholesale, must I take a polygraph? I feel that it is totally inappropriate and unnecessary.

If the truth be known, the retail stores use the polygraph as a tool to conveniently dispose of personnel employed or people seeking employment without any explanation.

I would like to take this time to explain such an instance in which I was, personally, involved and the events which have changed my life.

In 1981, I was employed in Virginia as a salaried employee, as the watch and clock buyer of the Washington market, which included Virginia, Maryland, and North Carolina. I also did in-store appraisals and sold fine jewelry. I was one of five salaried employees of about 40 total employees.

I came to work on a morning after my day off and was approached by my boss, who informed me that there was a Rolex presidential watch missing from the inventory. He then said he thought I had done something with the watch, and I told him I knew nothing about it. He informed me that I would have to take a polygraph test along with everyone else. I agreed to take the test and they set an appointment.

I was all set to go to the polygraph examination, which was a week away. During this time my boss took me into his office and told me that he was sure that I took the Rolex and for me to own up to it. I reiterated my innocence in the matter. Two days before the polygraph, the watch was found misplaced on a shelf in the back room. I was told that we were still going to be tested. I was given the first appointment.

When I went to the polygraph examination I felt as though I was a criminal going to the electric chair. The examiner did not greet me in the same manner as when I went in there at the interview process. I was asked about the Rolex; if I knew anything about its disappearance or if I had any suspects of who did. I was asked personal questions, including whether or not I had ingested any drugs in the last 48 hours. He repeatedly asked me about the watch.

After the examination the examiner told me that I had not passed the test. I protested strongly; and went into the waiting area, looked around, and there was no other employees there to take the test. In fact, I learned later that they were told to forget about it. When I returned to the store, my boss had already cleaned out my desk and all of the contents were in a paper box. I was then informed that my employment was over.

I went home to Reston, VA, and could not believe what had just happened to me. I called my family's attorney in Portland, ME, and relayed what had happened to me. I secured an attorney to initiate a legal action against the jewelry firm that I worked for. While I had filed with an attorney, I also filed against the employment security division, admitted failing the polygraph and that was the reason for my discharge. The company never replied, but paid my unemployment insurance.

I responded to an ad for manager of a fine jewelry store in Washington, DC. After my application I was granted an interview with the owner. After the 2-hour interview I was hired by the owner, and I thought that I had a job now. I did not tell them that I had flunked a polygraph test.

I went home, and a couple of days later I got this phone call saying that my appointment had been withdrawn. Through talking with people that I had worked with or for in the other store, a person had told me that they had given me an unfavorable response. In other words, they told them that I had flunked the lie detector test; so that inferred that I was a thief.

I didn't know exactly what to do. I didn't know what to do with my life because the jewelry business was the only thing I had really had experience in. I lost my car, my condominium, all my credit. I returned home to Maine shortly after all this, and without any income and no hope of employment.

After a few weeks I gathered enough courage to apply for a minimum-wage job in a local jewelry store. I told them of the adverse polygraph examination during my interview, which abruptly ended the conversation and any employment opportunities.

I do not wish anyone the feelings that I received after failing a polygraph. Today, after finding a master craftsman jeweler and being his apprentice with no pay, I have my own small jewelry business that I work on repairs and custom designed pieces. Even now, if I went to the big city, after working a couple years on my own, if I brought up the subject of not passing a 15-minute polygraph examination, I would find it hard to get a job in the jewelry business.

That brings upon why I am in front of you today. The polygraph says that I am a thief. I am not. I believe that there are other ways to qualify someone for employment, and not ruin their careers and dignity for life.

Mr. **Martinez**. Thank you, Mr. Stanley.

[Prepared statement of Walter Packard Stanley III follows:]

PREPARED STATEMENT OF WALTER PACKARD STANLEY III, JEWELERS WORKBENCH, BANGOR, MAINE

My name is Walter Packard Stanley III and I am a jeweler from Bangor, Maine. I would like to talk to you about my experiences with polygraph examinations in the workplace.

I first would like to tell you that I am a honorably discharged Vietnam era veteran and a charter member of the Republican Presidential Task Force, in good standing. While in the service I was granted a top secret Background Investigation Clearance to work with the Lance Missile System, as a launcher specialist. Since this period of duty to my country I have been actively involved in the jewelry business.

While having been in the jewelry business most of my adult life, I have worked with an importer, a wholesaler and a retailer. While some of the jobs I've had in the business required a polygraph examination, others did not.

I am outraged at the fact that the jewelry industry is trying to exclude themselves from a prohibition of polygraph examination in the workplace. I do not feel that they should be excluded.

While I had a territory of forty-eight states and traveled with a gold line consisting of hundreds of fourteen carat mountings and loose stones, I was never given a polygraph test as part of the application process or at any time during my term of employment.

But while working in the retail store I found the polygraph to be common place. When applying for a retail position the polygraph is part of the interview process.

In the wholesale jewelry industry most of the salesmen are inventoried once a year, but the retail stores are done mostly on a quarterly basis. In the retail setting the merchandise is taken out of the cases and stored overnight in a vault and replaced daily. The good manager takes a mental inventory daily. You may ask yourself why, with so many security precautions that are employed in the retail setting are polygraph examinations necessary? I do not believe that as for an application for a job you should be subjected to a polygraph examination with all the daily security precautions that are already employed.

If, in fact, I can carry a wholesale line of jewelry into a retail store to sell them mountings and not take a polygraph, why then when working in the retail store selling to retail customers the same mountings I sold to them wholesale must I take a polygraph? I feel that it is totally inappropriate and unnecessary.

If the truth be known, the retail stores use the polygraph as a tool to conveniently dispose of personnel employed or seeking employment without any explanation.

I would like this time to explain such an instance in which I was personally involved, and the events which have changed my life.

In 1981 I was employed in Virginia as a salaried employee. I was the watch and clock buyer of the Washington market, which included Virginia, Maryland and North Carolina. Also I did in-store appraisals and sold fine jewelry. I was one of five salaried employees out of about forty total employees.

I came to work on the morning after a day off and was approached by my boss, who informed me that there was a Rolex Presidential watch missing from the inventory. He then said he thought I had done something with the watch. I told him I knew nothing about the watch. He informed me that I would have to take a polygraph test along with everyone else he suspected. I agreed to take the test and was given an appointment. I was all set to go to the polygraph examination which was a week away. During this time my boss took me into his office and told me he was sure that I took the Rolex and for me to own up to it. I reiterated my innocence in the matter. Two days before the polygraph the watch was found misplaced on a shelf in the back room. I was told we still were going to be tested. I was given the first appointment.

I went to the polygraph examination feeling as though a criminal going to the electric chair.

The examiner did not greet me in the same manner as when I went there in the interview process. I was asked about the Rolex, if I knew anything about its disappearance, or if I had any suspects of who did. I was asked personal questions, including whether I had ingested any drugs in the last 48 hours. He repeatedly asked me about the watch. After the examination the examiner told me that I had not passed the test. I protested strongly and went into the waiting area. I looked around—there were not any other employees there to take the test. In fact, I learned later that they were told to forget about it. When I returned to the store my boss had already cleaned out my desk for me and all of the contents were in a paper box.

Then I was informed that my employment was over. I went home to Reston, VA and could not believe what had just happened to me. I then called my family's attorney in Portland, Maine and relayed what had just happened to me. He gave me a name of an attorney he had worked with in Washington. I called him and he agreed to take my case with an initial retainer of one thousand dollars, which I paid him. I filed against the jewelry firm with the employment security division, admitted failing the polygraph and that was the reason for my discharge. The company never replied, but paid my unemployment insurance.

I responded to an ad for manager of fine jewelry in a store in Washington, D.C. which after my application I was granted an interview with the owner, who after a two hour interview, hired me. I did not tell him that I flunked a polygraph nor did he request one when he hired me. A couple of days passed when the personnel office called and informed me that the appointment had been rescinded.

I did not know what to do with my life because the jewelry business was the only thing I really had experience in. I lost my car, my condominium, and all my credit.

I returned home to Maine shortly after all this to my family, without any income and no hope of any employment. After a few weeks at home I gathered enough courage to apply for a minimum wage job in a local jewelry store. I told them of the adverse polygraph examination during my interview, which abruptly ended the conversation and any employment opportunities.

I would not wish anyone the feelings that I received after failing a polygraph.

Today after finally finding a Master Craftsman jeweler and being his apprentice with no pay, I have my own small jewelry business that I work on repairs and custom designed pieces.

Even now, if I went to the big city after working a couple years on my own, if I brought up the subject of not passing a fifteen minute polygraph examination, I would find it hard to find a job in the jewelry business.

That brings upon why I am in front of you today. The polygraph says that I am a thief. I am not.

I believe that there are other ways to qualify someone for employment, and not ruin their careers and dignity for life.

Mr. MARTINEZ. Norma Rollins.

Ms. ROLLINS. I am Norma Rollins, associate director and director of the privacy project of the New York Civil Liberties Union, which is the New York affiliate of the American Civil Liberties Union. I thank you for the opportunity to appear before you today to endorse the enactment of these two bills.

Lie detector tests are inherently abusive, degrading, and humiliating. They violate humanitarian principles of fairness and justice, and they simply don't work. There is only one way to control the abuse of workers by polygraphs, and that is to ban all such testing. No measure short of a total prohibition can be effective. Each of the proposals before you today go a long way toward that goal, by prohibiting the use of lie detectors by private sector employers involved in or affecting interstate commerce. We heartily endorse the enactment of such measures and are grateful to Mr. Williams, Mr. McKinney, and their many colleagues for introducing and supporting them.

As director of the privacy project, I have over the last number of years spoken to over 1,000 polygraph victims. The most striking fact that I have come away with about polygraphs is that nearly every employer who uses the polygraph regards it as a requirement of employment. Because for every applicant who balks another can be found who will submit. The uncooperative employee can be pressured through many subtle and not so subtle ways.

Workers subjected to polygraph tests have literally nowhere to turn for help. In most States there are no statutory protections; in many States where they do exist, they are weak and ineffective; and in many States where strong statutes exist, employees are routinely sent over State lines to take tests in other locations. The courts have been unresponsive. Unions, for workers who have them, are frequently powerless to fight back.

It is pointless to discuss polygraph testing, as many of its proponents would prefer us to do, in terms of voluntary, willing subjects. However one ultimately judges the merits of the polygraph as an employment tool, it must be accepted that coercion, explicit or only implied, is always a factor.

It is further apparent that employers who use polygraphs generally are not interested in lie detection as such. Rather, they are looking for information about their employees or applicants' past and present lives, thoughts, attitudes, and character. This means that the questions posed to precipitate these damaging admissions are likely to be intrusive, offensive, self-incriminatory and, in some instances, illegal.

While some proponents try to argue that a properly administered test does not delve into areas that are personal or private, experience proves otherwise. In fact, employment polygraph tests might well be characterized as strip searches of the mind, probing for hints of guilty knowledge, personal weaknesses, undetected misdeeds, bad habits, and attitudes. In both content and technique, polygraph tests violate personal privacy as most people understand that illusive concept.

I have, in my written testimony to you, given you a number of stories of people that have reported to us their experiences with taking polygraphs. We have heard here today estimates of a million a year. I think that estimate far undercounts the number of tests that are really given in this country. The American Polygraph Association, last year at their annual meeting, estimated 2.3 million per year, and they say that they are 90 percent accurate.

There are lots of disputes about the accuracy. I think 90 percent is far too high. But even if they were 90 percent accurate, that would mean that 230,000 people every year would be incorrectly judged guilty by a polygraph machine and denied employment opportunities as a result of that testing.

I would like to tell you just one story about someone who came to us with a polygraph situation that ended up in him not getting employment based on a medical disability that he had. He went to apply for a job at a store. He was sent to the polygrapher. The polygrapher asked him if he had any medical conditions, to which he replied, yes, he had epilepsy but he had not had a seizure in over 5 years. At that moment the polygrapher refused to test him, and sent him back to the personnel office where the personnel office refused to hire him.

Not, they said, because he had a medical disability of epilepsy, but because they could only hire people who had passed the polygraph, and therefore he was denied the opportunity for a job based on a medical condition which should not have been considered in the context of a job and which had not caused him any difficulty and would not have hurt his job performance in any way.

If lie detectors were merely unreliable or subjective, their continued use in the employment situation would be irrational but not a matter of civil libertarian concern. But in addition to their highly subjective quality and their proven unreliability, lie detectors pose a serious threat to the privacy of individuals. As another congressional subcommittee concluded a decade ago, lie detectors pit "individuals against a degrading machine * * * and pry into [the person's] inner thoughts. Limits, beyond which invasions of privacy will not be tolerated, must be established. * * * Privacy is a fundamental right that must be protected by prohibitive legislation from such unwarranted invasions."

Thank you.

Mr. **Martinez**. Thank you, Norma.

While you were speaking, you actually corrected a report for us in which we had a typographical error. It said 23 million, 2.3. Thank you.

[Prepared statement of Norman Rollins follows:]

Prepared Statement of Norma Rollins, Associate Director and Director, Privacy Project, New York Civil Liberties Union

I am Norma Rollins, Associate Director and Director of the Privacy Project of the New York Civil Liberties Union, the New York State affiliate of the American Civil Liberties Union. I thank you for the opportunity to appear before the Subcommittee today to address the use of lie detectors in employment and the proposals before you, namely the Polygraph Protection Act of 1985 (H.R. 1524) and the Polygraph Control and Privacy Protection Act of 1985 (H.R. 1924).

Lie detector tests are inherently abusive, degrading and humiliating. They violate humanitarian principles of fairness and justice, and they simply don't work. There is only one way to control the abuse of workers by polygraphs, and that is to ban all such testing. No measure short of a total prohibition can be effective. Each of the proposals before you go a long way toward that goal, by prohibiting the use of life detectors by private sector employers involved in or affecting interstate commerce. The ACLU heartily endorses the enactment of such a measure and is grateful to Mr. Williams, Mr. McKinney and their many colleagues for introducing and supporting these measures.

INTRODUCTION

The facts and issues involved in polygraph testing cen be summarized as follows:

Most strikingly, it is evident that nearly all employers who use polygraphs regard them as a requirement of employment. For every job applicant who balks, another can be found who will submit; the uncooperative employee can be pressured in many subtle and not so subtle ways. Workers subjected to polygraph tests have literally nowhere to turn for help. In most states there are no statutory protections; in many where protections do exist they are weak and ineffective; the courts have been unresponsive; unions, for workers who have them, are frequently powerless to fight back. It is pointless to discuss polygraph testing, as many of its proponents would prefer to do, in terms of voluntary, willing subjects. However one ultimately judges the merits of the polygraph as an employment tool, it must be accepted that coercion, explicit or only implied, is always a factor. The irony of the supposedly "voluntary" test is only emphasized by the insistence of many examiners that their subjects sign a waive asserting their "voluntary" agreement to be tested.

Further, it is apparent that employers who use polygraphs generally are not interested in "lie detection" as such. Rather, they are looking for information about their employees' or applicants' past and present lives, thoughts, attitudes, and character, in hopes that such information can help them decide whether a potential employee is a good risk, or whether a current employee has been cheating or stealing. This motivation has three important consequences. First, it means that the employer does not particularly care whether the polygrapher claims to have caught the subject in an outright lie, or simply induces the subject into "admissions" of misbehavior or character defects. In daily practice, the latter occurs much more often than the former. Second, it means that the questions posed to precipitate these damaging admissions are likley to be intrusive, offensive, self-incriminatory, and in some instances illegal. (For example, New York law forbids employers to ask applicants about past arrests not followed by conviction, but polygraphers ask that question all the time.) And third, it means that the employer is predisposed to be satisfied with the polygrapher's unsubstantiated assertion that a subject was dishonest, deceitful, or evasive on the test without looking further for more objective evidence of a person's fitness or unfitness for employment.

While some proponents try to argue that a properly administered test does not delve into areas that are personal or private, common experience proves otherwise. In fact, employment polygraph tests might well be characterized as general searches of the mind, probing for hints of guilty knowledge, personal weaknesses, undetected misdeeds, bad habits and attitudes and other such vague matters. In both content and technique, polygraph tests violate personal privacy as most people understand that illusive, but deeply valued concept.

We have found that many employers use the polygraph because they think it is faster and less expensive than other methods of investigation and, perhaps unconsciously, because it relieves them of the need to confront difficult issues: how to select the most qualified workers, how to create a work environment conducive to employee loyalty and honesty. By resorting to the polygrapher as an intermediary—to ask the intrusive, sometimes illegal questions, to elicit the damaging admissions, to make delicate judgments about human nature and predictions of future performance—employers can evade their responsiblity for developing constructive hiring and management policies.

Ironically, while many employers say that they use polygraphs for self-protection, the evidence is mounting that the polygraph is virtually useless as a "lie detector," as a crime detector, and as a predictor of job performance. Many studies, most recently the report of the Congressional Office of Technology Assessment (November 1983), confirm our long-held belief that there is no scientific evidence to support the validity of polygraph testing as a tool for employment decisionmaking. Because the author of that study and other recognized experts will testify before you today on the issues of reliability and accuracy of polygraphy, I will not discuss the findings of these analyses. What becomes clear from these studies is that the machine is significant not because it is accurate, but only because it lends an aura of science to the freewheeling interrogating techniques of the polygrapher, and therefore encourages the employer to lend special credence to the polygrapher's judgments.

The employer stands to gain little from the polygraph, but may lose a great deal: rejected applicants who would have been productive workers, and the respect and loyalty of deeply resentful employees, who must submit to a procedure that they feel is intrusive, humiliating and intimidating.

There is no doubt that the polygraph test violates the most fundamental principles of the Constitution: the right of privacy, the privilege against self-incrimination, and the presumption of innocence. It is sometimes suggested that polygraph abuses could be curbed by regulating testing practices or through licensing statutes. But, employment polygraph tests are inherently abusive. Such statutes would only legitimize and bestow the government's "seal of approval" on an unscientific, subjective procedure that is by its very nature coercive, intrusive, and conducive to harassment and discrimination. Polygraph tests do not need to be regulated; they need to be banned.

The NYCLU has undertaken an in-depth study of polygraph use in employment. As part of our research we have surveyed employers who use polygraphs, and those who do not as well as "victims" of polygraph abuses. I would like to take this opportunity to tell you what we learned.

I. THE POLYGRAPH: IS IT A "LIE DETECTOR"?

The polygraph is one of several popularly called "lie detectors." Like the psychological stress evaluator (PSE) and voice stress analyzer, which monitor changes in vocal sounds, and some less-known devices that measure dilations in the pupil or movement of the stomach, the polygraph records physical changes in the body: fluctuations in blood pressure, respiration, and perspiration that occur as the test subject answers a series of questions. By studying the physiological measurements, the polygraph operator makes a judgment whether the subject's response to each question was truthful or deceptive.

The theory by which lie detector tests are said to detect lies rests on a chain of cause-and-effect assumptions: certain patterns of physiological change are caused by stress; the stress is caused by fear and guilt; the fear and guilt are caused by lying.

But the polygraph machine itself is not purported to detect lies. No lights flash, no bells ring, when a lie is uttered. Rather, it is the job of the polygraph operator to interpret the data recorded by the machine. By careful questioning and close observation of the subject, the operator is supposed to recognize and discount extraneous reactions—induced, perhaps, by nervousness or the effects of medication—and isolate the meaningful signs of deception. Thus it is the operator, not the machine, that is the real "lie detector."

To determine if the polygraph test really does detect lies, one must examine first the theory on which it is based. That theory presupposes a direct causal connection between the subject's act of lying and the physiological responses recorded by the polygraph. It assumes that the person who tells a lie experiences a strong emotional reaction of guilt and fear which is manifested by irregularities in blood pressure, respiration and perspiration. Such a hypothesis is difficult to sustain, however, even in theory. For example, what if a person can lie without guilt or tells a lie believeing it to be true? But more important, it is the reverse of this cause-and-effect presumption that causes problems. Are physiological functions necessarily affected only by emotional responses? Do strong emotional responses necessarily occur only because a lie has been told? Are fear and guilt necessarily the only emotional responses that create measurable physiological reactions? Are fear and guilt necessarily the only strong emotional responses that a subject would experience during a polygraph test?

Logic, of course, requires a negative answer to all these questions. So does the empirical evidence. Indeed, rage, embarrassment, and frustration may be far more common than fear and guilt. It is also accepted that such other factors as the use of medication, or drugs, fatigue, physical conditions such as heart abnormalities or epilepsy, even a headache or a cold, can affect polygraph readings.

Since everyone agrees that the polygraph's readings must be interpreted to determine whether they reflect the subject's reaction to lying or to some other stimulus, the proof of the test's validity rests on polygraphers' ability to demonstrate that they can, in fact, use the polygraph chart to distinguish deceptive from truthful responses. Polygraphers cite findings of 80 percent, 90 percent, and even higher accuracy for the polygraph in various controlled experiments, and actually claim better results in "real life" situations. Other studies indicate accuracy and reliability to be no greater than 50 percent.

Suppose, however, that the polygraph really was 90 percent accurate in detecting lies: what about the other 10 percent? If that figure represents subjects erroneously described as deceptive on a polygraph test, and if employers use such judgments to make decisions about whom to hire and fire, and if, as was estimated at the 1983 annual meeting of the American Polygraph Association, over 23 million Americans would submit to such tests in 1984, then it could very well be that even a 10 percent error rate would unjustly label (and probably deprive of employment) up to 230,000 people a year. False positives, which seem so insignificantly few in small laboratory experiments, take on new dimensions in the "real" world.

Of course, not all of the erroneous judgments are necessarily false positives. They might include a sizeable number of undetected liars. Either way, one might argue, the polygraph's validity is zero whenever the polygrapher makes a mistake and one hundred percent when the polygrapher is right. The problem is that no one can tell—and verify—which is which.

Where is the independent verifying evidence when tests are given to job applicants and employees: When a polygrapher says that an applicant was deceptive on a question regarding drug use, is there any independent evidence that the subject did in fact take drugs? When an employee is said to be deceptive in replies to questions about a theft from the cash box, is there any independent evidence of the employee's guilt? No one has ever formally verified the validity of the polygraph test in the context of employment, and it is unlikely that anyone ever could do so. The validity of the polygraph is generally taken on faith; if employers choose to believe that it works, their faith alone must be sufficient, because they have no objective basis upon which to prove the polygraph right or wrong.

We also know something, or can conjecture with reasonable fairness, about the preconceptions and attitudes of many polygraph operators. Despite rhetoric about their impartiality and desire to clear the innocent, it must remembered that they are being paid to identify dishonest people and protect employers from unreliable, untrustworthy employees. Their view of human nature is not particularly flattering. John Reid and Associates, probably the nation's leading polygraph company, says that four out of ten prospective employees are dishonest; in some categories, such as bartenders, gas station attendants, and pharmacists, the figure is considerably higher.[1] The American Polygraph Association believes that three out of four people have stolen something from an employer at some time in their lives.[2]

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[1] Newsday, Nov. 9, 1977.

[2] Hearings Before the Subcommittee on the Constitution of the Committee on the Judiciary on S. 1845, 95th Cong., 1st and 2d Sess., 1977 and 1978; Testimony of J. Kirk Barefoot and Charles Marino for the American Polygraph Association, pp. 33–59.

The degree to which an operator "needs" to reach a particular conclusion or is interested in obtaining a particular result may well affect his or her treatment of the subject, the administration of the test and the analysis or resultant data. Polygraph operators are in the business of discovering deception and the importance of maintaining a long-standing business relationship with the employer-client is critical. Therefore, a report by the operator may result in the loss of an important business account. On the other hand, if the polygraph operator does come up with a conclusion providing the employer with a finding upon which action against an employee can be based, the polygraph operator has provided the employer with the information for which a price has been paid.

Without suggesting the actual use of quotas, one can justifiably assume that this skeptical attitude will result in adverse judgments about many test subjects who look or behave in a way that the polygrapher finds suspicious, doubtful or distasteful. The personal biases of the operators and their most basic likes and dislikes for certain kinds of people must naturally enter into their judgments where they have a strong inclination to believe that most people are dishonest, or at least frail and unreliable.

Another important element in the operator's attitude is the need to convince the test subject that the machine cannot be fooled. Unless the subject believes that the polygraph will unmask lies, he or she is unlikely to evince detectable fear at the operator's questions or, more important in the ordinary practice of polygraphy, to make admissions to the operator. For, in the words of one expert observer, "the mystique of the lie detector makes many people react in the polygraph room as if it were a confessional. The polygraphers know this and do everything they can to capitalize on it." [3] Thus, while the operator may sincerely wish to put the subject at ease, he or she must also be sufficiently intimidating to sustain the subject's awe of the machine. Many polygraphers go considerably beyond this and become openly hostile and threatening, as we know from the tales told by angry, shaken test subjects.

The polygrapher's function is to obtain information from the subject and make assessments of the subject's character, which are then passed on the employer. It does not really matter if the information is obtained from a reading of the polygraph chart or from the subject's own admissions before, during or after the test. The final worth of the polygraph test to the employer, therefore, is what the opeator thinks, feels, or claims to know about the subject. The reliability and ultimately the validity of the polygraph test depend upon the operator's skill in judging human nature; the use of polygraph machine merely bolsters the operator's, the subject's and the employer's belief in that skill.

Another major variable in the polygraph's reliability and validity as an employment tool is the content of the test questions. Employers send applicants and employees to polygraphers because they want information they cannot or will not get for themselves. In the case of an applicant, such information might include items about the person's health, habits, family life, police record, past employment behavior, and future intentions. In the case of a present employee, it might include participation in or knowledge of a particular misdeed against the employer, or even misconduct of which the employer is not yet aware.

Yet the polygraph's proponents take pains to emphasize, in defense of their claims for the test's scientific validity, the importance of a rigorous format using a few carefully worded, narrowly defined questions regarding a specific situation or event. The more general the enquiry, the more room is created for the subject's irrelevant thoughts and emotions to cloud his or her reactions and thus diminish the reliability and validity of the test results. Polygraph tests given for employment purposes have all the deficiencies of breadth, vagueness, and lack of focus that are conceded to lessen the validity and reliability of the polygraph as a "lie detector."

The polygraph "works" because the test situation is structured to allow the examiner to question, manipulate, cajole, and if necessary harass the subject into revealing potentially damaging information which, once reported to the employer, will be used to make hiring and firing decisions. It also allows the examiner free rein to make judgments about the subject's behavior and character, with or without reference to the polygraph charts; these also, once reported to the employer, will determine who is hired and fired. It is clear that the polygraph "works" only in the sense that it intimidates the test subject into an outpouring of confessions in hopes of appearing "clean." If the subject does not offer such confessions, the examiner is at liberty to characterize the subject's reticence as deception, and need not offer further proof.

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[3] Ibid, prepared statement of David T. Lykken, PhD., Professor of Psychiatry and Psychology, University of Minnesota, p. 30.

Does the polygraph protect employers from dishonest employees? If an employer rejects or fires everyone who makes a damaging admission as well as everyone who is labeled deceptive by the polygrapher, the employer may feel that he or she is protected. The fact that the employer has probably rejected or fired a good number of perfectly innocent people holds little weight for an employer who believes in the polygraph. Just as no one has ever truly verified the validity of the polygraph as a "lie detector," much less as a predictor of employment performance, so no one has ever verified the value of polygraphy to employers in controlling dishonesty and unreliability among employees.

People, not polygraphs, are the "lie detectors." Beyond the ordinary powers of human observation and judgment, the polygraph offers the aura of science, but on closer inspection, it is really the aura of magic.

II. EMPLOYERS WHO USE POLYGRAPHS: HOW AND WHY

No one knows how many employers use polygraphs. Such data would be very difficult to obtain, since employers need not report to anyone how many tests they give, or whether they use the polygraph at all.

A selection of the complaints received by American Civil Liberties Union affiliates around the country exemplifies the kinds of business that are most likely to test applicants and employees: fast food chains; department stores; banks and other financial institutions; vending equipment companies; jewelers; brokerages; chemical plants; transportation firms; restaurants; payroll services; and drug stores.

Complaints in recent years indicate that along with a staggering increase in the number of examinations administered, there has been a definite expansion in the job categories subject to this testing. While the polygraph was once used primarily for entry-level jobs in retail outlets and fast food chains, this is no longer the case. Today, companies frequently test their entire staffs. Investment managers, vice presidents and supervisory personnel are no longer immune. In some industries it has become virtually impossible to get a job in any company without submitting to polygraph testing before being hired and regular or random testing during the tenure of employment. So alarming has been the growth of the so-called "lie detector" tests that it has been estimated that perhaps one out of every four employees who would otherwise have been hired may be disqualified upon the recommendation of a polygraph operator.

NYCLU researchers interviewing employers recently heard a variety of reasons given for using the polygraph, many of them apparently more a statement of faith than fact:

Although he believes that a polygraph test is never 100% accurate, the personnel director of a restaurant chain will reject applicants on the basis of their test performance, believing that the polygraph examiner can be relied upon to "compensate" for any distortions caused by nervousness.

The personnel director of a pharmacy would wonder, "What is he hiding?" if a person refused to take a test.

A large bank instituted pre-employment polygraph screening a few years ago after a $20,000 shortage occurred; since then, no money has been stolen, presumably a sign of the polygraph's efficacy. Because a bank's assets are so vulnerable, they must be protected from "high risk" employees, and the polygraph is seen as the most reliable tool for weeding out the riskiest applicants.

One company uses the polygraph because its competitors do, but its director of personnel knows that some dishonest people can "beat" the test.

At another bank the personnel director agreed that the test does not actually detect lies and volunteered the opinion that it may discriminate against minority applicants, but "supposes" that it is a good way to judge candidates.

The polygraph is a "valid indication of character," said one personnel director. But another said that it gives only a "ball park feeling" about a person's honesty; it cannot show that a person is dishonest, but at most only that the person might be dishonest.

One executive (who had himself been polygraphed) called the test "humiliating," and thought that a careful check of references probably would give a more accurate indication of an applicant's character, but is too time-consuming.

It is interesting that only one of the employers interviewed had done any extensive reading about the polygraph and was familiar with the literature evaluating its validity and accuracy. Most of the personnel directors, and even the security directors, knew very little about the technical aspects of polygraph testing, and did not elaborate on their assertions that the tests are "accurate" or "useful." Except for the one bank that had lost $20,000 before instituting routine testing but nothing since, none offered even ancedotal evidence to show why the device might be worth using.

An NYCLU survey of rural employers produced another kind of response indicating a reason for the polygraph's attractiveness: many of these employers mentioned its relative cheapness and speed as compared with other investigative methods. One employer cited a drop in employee turnover from 30 percent to less than 2 percent after a policy of regular testing was adopted and another recalled that before the polygraph was used by his company, "we had an escaped convict wanted on assault charges working for us . . . for about two years before the police caught up with him." (He also mentioned that the convict had a flawless record with the company before the police apprehended him.)

The interviews with employers were revealing in that, apart from the factors of cost and speed, there appears to be nothing concrete or measurable supporting their professed faith in the polygraph. In fact, some cling to that faith despite twinges of doubt or regret: several said outright that a polygraph test is clearly an invasion of privacy and, as noted earlier, one called it "humilitating," while another admitted that is is probably discriminatory, and several were unsure about its reliability.

To judge from the number of complaints received by ACLU affiliates, it is widespread practice for employers to insist on polygraph tests after the discovery of a shortage and to fire, or at least severely harass, anyone who refuses, anyone who "fails," and anyone who is accused by the polygraph by the polygraph examiner. It also appears to be increasingly common for employers, especially in large retail franchises and chains, to institute periodic testing, once or even twice yearly, and to dismiss employees who "fail" even if there has been no discovered shortage.

In states that have laws which prohibit mandatory testing, but allow employees to "volunteer" or "request" a test, complaints indicate that employees are not informed that testing is voluntary, feel coerced into submission and are told either explicitly or subtley that failure to consent to testing will result in loss of employment.

It seems clear that once an employer chooses to use the polygraph for any purpose, personnel decisions will be strongly influenced, if not totally determined, by the verdict of the polygraph operator. Therefore, it is illuminating to inquire into the relationship between the employer and polygrapher. How does the employer select an operator? Does the employer dictate the questions to be asked? Does the employer see a complete report of the questions and answers, or merely a summary, or does the polygrapher submit only a judgment or recommendation, such as "poor risk," or "probably deceptive," or "not recommended"? What does the employer most care about: the admissions made by the test subject, whether during or before or after the test, or the polygrapher's judgment that the person is telling the truth, whether or not the truth contains any derogatory information?

In our interviews with employers, it became evident that most do not know—nor seem to wish to know—very much about what goes on during a polygraph test. Indeed, only one employer said that he had ever observed a test. Most seem to defer to the polygrapher's evaluation, even when they ask for a full report instead of a simple recommendation or conclusion. Despite many expressed reservations about the total reliability of the polygraph, we did not find any employer who questioned the polygraph operator about interpretations and judgments, and only one who asked for a second test if the results of the first were confusing.

Policies also vary widely with respect to the disposition of the test report itself, whether the applicant or employee can read the report, how long it is kept, and who has access to it. A number of employers assume (wrongly) that a test subject can examine his or her own report simply by asking the polygraph operator for it, but seem rather vague about how this really works in practice. One company keeps reports for seven years; another permanently—those on rejected applicants in a "dead" file—and will not permit the subjects to see them. Another company keeps the reports for three months, filed in the security office, from which the subject will receive a copy on request; after three months, the reports are destroyed. Most employers said they would not share or discuss the results of polygraph reports with other companies or outside individuals.

According to our interviewers, employers were reluctant to discuss the polygraph. Many refused to talk at all, and those who did often steered the conversation away from their own practices and toward the practices of their competitors. Of course, the fact that our interviewer represented an organization whose opposition to the polygraph is well known was bound to elicit some defensiveness, but it also seemed as if many employers are not quite as certain or enthusiastic about the advantages of the polygraph as they profess to be. The economic rather than the scientific virtues of the polygraph were the main topic of discussion, and ethical issues were overshadowed by practical concerns, especially a faith that the polygraph can effectively weed out undesirable employees. Yet the same interviewers encountered employers who said they do not use the polygraph precisely because of its practical and economic disadvantages.

Our conversations with employers leave us with the impression that most are pragmatic rather than zealous about their use of the polygraph. They are primarily concerned with self-protection, and will choose what appears to be a cheap, practical, and easy means to make hard decisions. If they think that the polygraph can help to do the job, they will use it despite lurking doubts about its reliability or its fairness. Once having taken that step, they tend to defer to the polygrapher and may not know very much about what is really done in the course of giving or interpreting a test. The common insistence that the polygraph test is voluntary seems to operate as an easy diversion from the issues of fairness, privacy, discrimination, and the dignity of the employee.

III. EMPLOYERS WHO REJECT POLYGRAPHS

Some employers who do not use polygraphs, including some who formerly used them and one who uses it but wishes that he didn't have to, have explained their reasons to the NYCLU:

Economics and practicality were the decisive factors for several employers. The district supervisor of a department store chain discontinued use of the polygraph in 1978: ". . . the costs outweighed its benefits at the time we stopped using it. It got to the point where only ten to twenty percent of our applicants were judged acceptable. It's just not worth it when you have to interview one hundred people to get ten employees." He thought that many of the candidates ruled "unacceptable" by his security department would have been perfectly satisfactory. He also learned that the chain's other branches in states that have statutory bans on the polygraph did not have any higher incidence of employee theft, nor did "inventory shrinkage" in the New York branches increase after 1978.

The security director of a chain of food stores dismissed the polygraph as useless, because "in cases of an inventory or cash shortage, we could test an employee, but we still wouldn't have any hard, legal evidence against him even if he failed the test."

The personnel manager of a fast-food chain called the polygraph "a hassle . . . an expensive practice that, for the most part, simply doesn't what its advocates claim it can do."

A chain store manager complained about his company's policy requiring that all applicants be tested by the security department. The result, he said, was that those he selected as the most promising applicants were repeatedly rejected by the polygraph operator—the consequence, he suspected, of the polygrapher's personal biases. At regional conferences he had discussed the problem with the chain's managers from other states, who were amazed to learn that New York allowed polygraph testing and could not imagine how a manager could properly "manage" without the freedom to select staff.

A man who had once conducted tests on management applicants for a fast-food store explained why he had lost faith in the ability of the polygraph to detect lies. He had concluded that the test detects only reactions, many of which actually distort rather than reveal truth. He characterized the polygraph as "useless" in solving internal thefts. His employers had used the tests, he thought, because they were cheap and gave an "objective" aspect to a decision-making process that would otherwise appear to be totally subjective.

Even some confirmed polygraph users are uneasy. Drug manufacturers and pharmacies are among the most common polygraph users, yet some of them have expressed qualms that a policy of polygraph testing creates an atmosphere of permanent distrust and hardens employees' feelings of alienation from the company. It would be much more constructive, these doubters have said, to assure employee honesty by building employee loyalty.[4] It is not insignificant that some of the employers who rely most heavily upon the polygraph recognize the price they pay in employee resentment—ultimately, in the loss of loyalty and good will.

Significantly, a study by a well-known polygraph enthusiast suggests that the polygraph, however one views its ethical and legal implications, may simply not be very useful, particularly for pre-employment screening.[5] In an employment setting, the examiner is not focusing on one concrete event in the past, but posing open-ended questions ("Have you ever stolen anything?") to which few people can reply with total confidence and no hint of equivocation. When used in a criminal investigation, the polygraph test is tightly structured, with a few very specific "relevant" questions interspersed with more general "control" questions. But the employment test is just the opposite: it sets a long sreies of general questions and produces a judgment of the applicant's honesty on the basis of signs of deception rather than signs of truthfulness. He also maintains that the polygraph test does not work unless participation is truly voluntary (which of course it is not when a test is required for a job), and that an applicant's repressed resentment at being coerced into a distasteful experience can itself skew his or her reactions and influence the test results. Perhaps most important, he stresses that however much a polygraph test may reveal about a particular event in the past, it has no predictive value. He points out that most applicants who are rejected after a test are rejected because of admissions made to the examiner and not because of the examiner's interpretation of the test readings. "Used in this way, the polygraph is simply a cover-up for eliciting damaging admissions by the subject against his own interest . . . . This is not science; it is subterfuge." Almost identical criticisms were voiced to an NYCLU interviewer by polygraph examiners who conduct tests for a New York City district attorney. Here again, it is significant that people who believe in the polygraph in principle reject claims for its validity, utility, and propriety in an employment setting.

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[4] Martha Glaser, "Employee Theft: Plugging the Leaks," 123 *Drug Topics* 57-60 (Apr. 6, 1979).

Some employers do not use polygraph tests because they cannot: they are forbidden to do so by state law. Does it matter? As mentioned earlier, one manager found that his colleagues from "no-polygraph" states felt that their decision-making capacities were actually enhanced by not using tests, and another learned that his chain's branches in "no-polygraph" states did not suffer any greater incidence of employee theft. That seems also to be the situation in a number of banks and chemical companies in New Jersey interviewed by the NYCLU: they rely upon traditional reference checks, and do not express frustration at their inability to use the polygraph.

Perhaps the most telling reason offered by a business manager for not using the polygraph is that given by a spokesperson for the American Management Association's Crime Against Business Project in testimony before a Senate Subcommittee, almost as an aside in the middle of a long statement stressing the need for more stringent and effective mearsures to prevent employee crime:[6]

I have a hypothesis with respect to the polygraph. If an organization is known to screen employees by use of the polygraph, it would seem very probable that that would deter the best kind of employee. That employee might say, "I don't want to work for an organization that starts off by thinking I may be a criminal or I may indulge in criminal activities once I am employed." . . .

The heavyhanded approach may well be counter-productive, but I think that may not be obvious to the small business person who has had no training in management practices and has never learned that certain things that seem obvious solutions can be counterproductive. . . .

What, then, does a good manager do to protect the company? "[The] control of crimes against business is more a matter of good management," said this AMA representative, "than of crime detection and 'cops and robbers.' . . . [The] key to the problem of employee theft is to make the employing organization a place that people identify with and 'feed good about,' and not one that is suspicious and threatening." [7]And what about claims that theft stops when the polygraph is brought in?

What would happen if you did not use the polygraph, but did not go on as you had before, but submitted a totally different personnel policy? You took people in, you trained them and you offered them careers . . . rather than saying: "We have a revolving door here. We will take the lowest possible candidate, pay him or her the lowest possible wage, and will not expect anything from this individual and offer nothing . . .—because we do not expect this person to amount to anything."

It seems to me that you can almost expect deviant behavior. You are setting up an atmosphere in which it is almost guaranteed to happen.[8]

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[5] David C. Raskin, "The Truth About Lie Detectors," 5 The Wharton Magazine 29–33 (Fall 1980).

[6] Testimony of Leonard Smith, Executive Director, Crimes Against Business Project, American Management Association, in Hearings before the Subcommittee on the Constitution of the Committee on the Judiciary on S. 1845, 95th Cong., 1st and 2d Sess., 1977 and 1978, pp. 472–73.

[7] Ibid., pp. 483–84.

[8] Ibid, pp. 477–78.

Thus, the real reason good managers do not use the polygraph is that they believe it is not good management.

IV. VICTIMS OF THE POLYGRAPH

The people who have to take polygraph tests often have a very different point of view from that of the employer who imposes them. Experiences described by anguished "victims" who have taken or are about to take polygraphs belie claims that the tests are fair, relevant, objective, unintrusive, and above all voluntary.

A mangager trainee for a drug store in New York City was sent to be tested the day after he was hired. Among the questions posed by the examiner before the machine was connected were: Are you a homosexual? Are you prejudiced? Did you ever attempt suicide? Did you ever steal from your employer? Have you ever taken or sold drugs? Do you have any psychological problems? Do you have any debts? To whom? For how much?

A part-time bank teller was accused by a fellow worker of stealing $1,000. The bank asked her to take a polygraph test. But the teller had recently had major surgery, and the polygraph operator said he would not administer a test without a doctor's note. The doctor wrote that the test results would not be conclusive because of the woman's medical condition. The allegation proved unfounded. The teller asked to be transferred to another branch. A month after the transfer the bank ordered all employees at this second branch to be polygraphed in connection with an incident that had occurred there before the teller was transferred. The operator—the same one who had conducted the earlier test—recognized the teller, who said that now the bank was insisting that she submit to the test despite her doctor's advice. The bank suspended and eventually fired the teller for "lack of confidence," even though the head of security had assured her that she was not a suspect in the second investigation.

A student working as a cashier in a grocery store was taken to a motel for questioning and a polygraph test about a cash shortage. The two-hour ordeal lasted beyond working hours into the evening.

A manager at a large bank was fired because a polygraph examiner concluded that he had stolen from a customer's account. These was no other evidence linking him to the theft or to any other misconduct. His job performance evaluations during his six year tenure at the bank were consistently excellent. He asked the manager of his branch to allow him to take a second polygraph test. He also asked the bank to bring criminal charges against him, so that he could clear his name. The bank refused both requests, and fired him. Since that time, over a year ago, he has been seeking jobs with banks and other businesses. No one will hire him.

A teenager replied truthfully to a polygrapher's query if he had ever been arrested. He said that he had, for stealing a car, but had been acquitted. He was rejected.

After a theft from a clothing store, a sign was posted informing all employees they would have to take polygraph tests. The examiner asked such questions as: Did your parents teach you to steal? How were you brought up? Do you have knowledge of anyone taking money? One woman was asked her nationality. Four employees, all Puerto Ricans, were fired.

A fifty-three year old woman, taking a preemployment test for a jewelry company, was asked if she had any ulterior motives in coming to work for the company, whether she planned to stay long, whether she had ever been arrested or fingerprinted. On her application she had not mentioned a previous job she had obtained through an employment agency, from which she had been let go after a week because the employer did not want to pay the agency fee. The polygrapher accused her of lying and withholding information, and "failed" her.

After sixteen years working for the same bank, a man "failed" five polygraph tests given after discovery of a $700 loss in his department. The examiner asked him if he had ever stolen anything, which he denied. On looking back, he recalled a long-forgotten incident: on his first day of work sixteen years before, he found a watch in his desk drawer and was told to keep it there until it was reclaimed. Many years later he took the watch with him when he transferred to a new branch. Bowing to company pressure, he agreed to resign in order to protect his profit-sharing investment and collect an additional month's salary.

The employees of a gift shop were told to take polygraph tests after $111 was discovered missing. Appearing on the appointed day and time, one of the managers asked the boss if she could postpone her test because a close friend had just died and she was very upset. She was refused. She told the operator she was upset, but he also refused to postpone the test. He began the interview by warning her that she had "better admit to everything" because other people had told him she stole from the shop. He questioned her about other employees: Did they steal? Did they "fraternize"? She told him of an instance when she had taken a necklace for the evening and had paid for it the next day. She told him she knew people who had stolen and "fraternized," but would not reveal names. After forty minutes of questioning, she was strapped to the machine. The operator told her she was tense; she replied that she had already told him this before the test. When the test was over the operator told her that the results were not good. She refused to sign the test sheet. He said that her refusal was an admission of guilt. She signed. Three days later she was fired for disobeying company rules against "fraternization."

Describing their emotional reactions to a polygraph test, many callers have told us they felt "humiliated," "demeaned," "shattered," "demoralized." "I was sick for a week," said one woman; another suffered an asthma attack when she got home; one man told us, "I felt as if I'd been raped." People say they are made to feel like criminals; they are offended and humiliated by the operator's accusing, often threatening manner; they are embarrassed and resentful at having to answer personal questions. Many say that before taking a polygraph they feel extremely anxious at the prospect; afterward, they worry how the test will affect not only their present employment but their futures as well.

But above all, people are angry. More than anything else, they are angry at the prying, bullying, and offensiveness of the questions put to them.

Here are some of the questions put to a woman applying for a job as dressing room attendant in a department store:

Did you ever use drugs?
Did you every smoke pot?
Did you ever steal? [Reply: a 50-cent magazine when she was fifteen.]
Is that all? You must have.
Did you ever shoplift?
Never?
Are you married?
What is your husband's salary?
What is your rent?
Did you have a happy childhood?
Were you popular?
Did you lie about your employment record?
Why did you falter on the shoplifting question?
What are you holding back?
Why are you shaking?

Many stories of badgering, bullying, and "inducement" to confess by a polygraph operator are reported to us. Sometimes they end with threats and dismissal; other times, the company may not act on the polygrapher's professed "discovery" (or perhaps not even received it), but the employee harbors the anxiety, the anger, and the shock for a long time.

Another typical story, illustrating the classic Catch-22, was told by an applicant for a job as security guard with a department store. He was asked by the polygrapher if he had ever been involved with the police. He answered, truthfully, that he had been arrested for shoplifting at thirteen, an incident he was legally entitled to conceal because he had been adjudicated as a juvenile. He lost the job because of that admission. But, presumably, if the test "worked" he also would have lost the job had he been "caught" lying by the polygrapher.

Although employers and polygraphers often protest that a properly run polygraph test does not pose personal or intrusive questions, it is significant that one of the most frequent questions, especially on pre-employment screening tests, is "Have you ever been arrested?" Whether or not one considers this question intrusive or personal, in New York State it is illegal: state law forbids an employer to inquire about an arrest that did not result in conviction.[9] Questions about age, nationality, handicaps, martial status, and union activities, depending on how they are worded and how the replies are used, may also violate state or federal law. Although it is the polygraphers rather than the employer who asks the question, the result may be precisely what these laws were written to prevent. Here is a recent example:

A man answered an ad for a position in inventory control with a large jewelry store. He had fifteen years' experience in this kind of work. After the first interview he was sent for a polygraph test; the personnel manager told him that he would be notified subsequently whether he was hired. He reported to the polygrapher's office. The operator, before starting the test, asked a series of personal questions, including whether he was under a doctor's care. He replied yes, for treatment of epilepsy. The examiner asked what kind of seizures he had, how often, when was the last one, what medication did he take, had his driver's license ever been revoked? He replied that he had not had a significant seizure in five years, since starting prescribed medication. The examiner told him he could not take a polygraph test, and instructed him to return to the personnel office. When he saw the personnel manager again later in the day, she brought up the subject of his epilepsy, then told him his application would be considered, then emphasized that she was looking for someone with a great deal of experience. He never heard. Three weeks later he phoned, to be told that the position had been filled. With the assistance of counsel from NYCLU, he filed a complaint with the State Division of Human Rights, charging that through its polygrapher, the store made impermissibly broad enquiries [10] about his disability and on that basis denied him a position for which he was qualified.

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[9] N.Y. Criminal Procedure Law, § 160.50.

The store's response to the complaint illustrates perfectly the reason that so many polygraph victims are left with rage and frustration. All applicants, it explained, must take a polygraph test. The polygraph operator refused to test this man without a doctor's permission. The position had to be filled immediately and there were other qualified applicants who did complete the polygraph test. The store did not ask about epilepsy; it did not ask the polygrapher to ask about epilepsy. The store did not dictate what questions the polygrapher should ask. The store did not have a representative present at the test. The refusal to give this man a polygraph test was the operator's decision, not the store's. The polygraph operator was not the store's agent, and even is he were, he exceeded any authority delegated to him by the store in asking about an applicant's disability.

One would think, on reading a statement like this, that the employer was not much more than a passive observer to a transaction totally beyond its control. But is was the store that made a polygraph test a precondition of employment, and the store that asked the polygrapher to verity the information on the application form, including a question about the applicant's disabilities. The application form posed the question properly—did the applicant have any disability that would prevent him from performing the job for which he was applying?—but in veryifying the response to that question, the polygraph examiner would quite naturally enquire into the specifics of the applicant's health. Moreover, if is accepted that a "good" polygraph examiner finds out whether the test subject is on medication or has a condition that mght affect the results of the test.

It is, in fact, the purpose of the polygraph examination to obtain information that the employer cannot or will not obtain directly. The polygrapher acts on the employer's behalf, and as his agent. But, as so many polygraph victims have learned, both polygrapher and employer manage to evade resonsibility for the actions and judgments of the other, and the employee is left alone to take the consequences.

CONCLUSION

If lie detectors were merely unreliable or subjective, their continued use in the employment situation would be irrational, but not a matter of civil libertarian concern. But in addition, to their highly subjective quality, and their proven unreliability, lie detectors pose a serious threat to the privacy of individuals. As another Congressional subcommittee [11] concluded a decade ago, lie detectors pit "individuals against a degrading machine . . . and pry into [the person's] inner thoughts. Limits beyond which invasions of privacy will not be tolerated, must be established. . . . Privacy is a fundamental right that must be protected by prohibitive legislation from such unwarranted invasions."

The New York Civil Liberties Union and its parent, the American Civil Liberties Union, strongly endorse the enactment of of legislation to prohibit employers from requiring, requesting or permitting employees or applicants to submit to lie detector examinations.

Mr. **Martinez**. With that, we will hear from Anthony Lutty.

Mr. **Lutty**. My name is Anthony J. Lutty. I am the international secretary-treasurer of the United Food & Commercial Workers Union, AFL-CIO.

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[10] § 296 of the Human Rights Law.

[11] Report of the Committee on the Judiciary, U.S. Senate, "Privacy, Polygraphs and Employment," 93d Cong., 2d Sess., November 1974.

For a variety of reasons, America's business managers are turning increasingly to the use of several devices in their attempts to ferret out potentially dishonest employees. Available data put the number of tests given at about a million, and we just heard that we are underestimating the amount of tests each year.

A Business Week article illustrates some of the uses business managers have found for lie detectors:

> Whatever their problems or stated objectives, United States' businesses have found a surprising range of applications for lie detectors. Not only are they looking for thieves, junkies, liars, alcoholics and psychotics among their workers; increasingly, the machines are being used to screen out applicants with health problems without resorting to more expensive physical exams . . . [to] reveal if a job seeker has a history of filing too many workmen's compensation claims . . . [to] spot workers who do not intend to stay on the job long enough to warrant costly training programs.

The UFCW is opposed to the employment use of all lie detectors. Lie detectors do not work. Research spanning 20 years has demonstrated that there is no scientific basis for polygraphs. In November 1983, at the request of Representative Jack Brooks, a Democrat from Texas, chairman of the House Committee on Government Operations, and Representative Frank Horton, a Republican of New York, the Office of Technology Assessment reviewed and assessed the scientific evidence on the validity of the polygraph testing. I would like to quote:

> OTA concluded that there is very little research or scientific evidence to establish polygraph test validity in screening situations, whether they be pre-employment, preclearance, periodic or aperiodic, random or dragnet.

That same House Government Operations Committee 20 years earlier reported, and I quote:

> There is no lie detector; neither machine nor human. People have been deceived by a myth that a metal box in the hands of an investigator can detect truth or falsehood.

In addition to the studies pointing out the unscientific nature of these so-called lie detectors, the UFCW believes substantial constitutional rights questions are raised by the use of these devices in employment, including self-incrimination, unreasonable search and seizure and our fundamental legal tenet—innocent until proven guilty. Although we are not constitutional scholars or experts, we feel these constitutional guarantees serve as the foundation of basic human dignity. The assault on these constitutional guarantees by polygraph is an affront to workers' dignity.

With questions arising regarding validity, constitutionality, ethics and the impact on employee morale and productivity, a reasonable question to ask might be: Why do employers choose to use these devices? Employers who use these devices can probably be divided into two categories: First, employers who have a sincere desire to hire the most honest employee possible and have been hoodwinked into believing that a polygraph test can tell them whether an applicant or employee is honest; and, second, employers who wish to use these devices simply to intimidate their employees.

Whether by design, as in the first case, or those employers in the second category, or by accident, as in the case of the first category, intimidation is usually the result of these tests.

Some States have attempted to license and regulate polygraph examiners in an attempt to control polygraph abuses. Personnel Journal reported a survey which addressed the licensing issue. It found that, and I quote,

> There is a substantially greater proportion of firms using the polygraph in states which legally prescribe licensing and training requirements for polygraph examiners than there is in states which do not regulate the practice in any way. Further, there is a great tendency for firms in regulated states to require (as opposed to request) the tests as a condition of employment or continued employment than exists in states where regulation has not been affected.

The UFCW is pleased to endorse in the strongest possible terms Representative Williams' H.R. 1524, as well as Representative McKinney's H.R. 1924.

In closing, we would like to acknowledge and thank Representative Williams for his leadership and his staff for their efforts in getting more than 150 House cosponsors, as well as Representative McKinney for his role in keeping this issue before Congress. And, finally, Mr. Chairman, we would like to thank you for these hearings—the first step in a process that hopefully will protect all workers from these intrusive and intimidating devices. And I thank you very, very much.

Mr. MARTINEZ. Thank you, Mr. Lutty.

[Prepared statement of Anthony J. Lutty follows:]

PREPARED STATEMENT OF ANTHONY J. LUTTY, INTERNATIONAL SECRETARY-TREASURER, UNITED FOOD & COMMERCIAL WORKERS INTERNATIONAL UNION

My name is Anthony J. Lutty. I am the International Secretary-Treasurer of the United Food and Commercial Workers International Union (AFL-CIO).

The UFCW has some 1.3 million members organized in 700 local unions throughout the United States and Canada. The UFCW and its local unions have contracts with tens of thousands of employers throughout the food processing, retail sales, leather and shoe manufacturing and other industries.

I appreciate the opportunity to present the views of the UFCW on the intimidation of American workers by polygraphs and other devices purporting to measure employee honesty.

For a variety of reasons, America's business managers are turning increasingly to the use of several pseudo-scientific devices in their attempts to ferret out potentially "dishonest" employees. Available data put the number of tests given at about one million each year and increasing.

A Business Week article illustrates some of the uses business managers have found for "lie detectors."

Whatever their problems or stated objectives, United States businesses have found a surprising range of applications for lie detectors. Not only are they looking for thieves, junkies, liars, alcoholics and psychotics among their workers; increasingly, the machines are being used to screen out applicants with health problems without resorting to more expensive physical exams . . . (to) reveal if a job seeker has a history of filing too many workman's compensation claims . . . (to) spot workers who do not intend to stay on the job long enough to warrant costly training programs.

Although there are several devices being touted as "lie detectors," by far the most popular "lie detector" is the polygraph.

Polygraph refers to a machine that displays, in graph form, three physiological responses. A corrugated rubber tube wrapped around the subject's chest measures blood pressure and pulse rate using a pneumatic pressure cuff around the subject's arm; and a psycho-galvanometer measures electrical conductivity due to increased perspiration by use of electrodes attached to the fingertips.

After the examiner attaches these devices to the subject, questions begin. Usually there are 10 questions with about 20 seconds between each question to allow the sensory device to react. After the completion of the questions, the examiner reads the graphs and attempts to determine the subject's honesty.

A "properly conducted" polygraph test, according to leading polygraphers, also involves a pre-test interview of about 30 minutes to explain the progress and review each of the questions. The "model" polygraph test generally lasts from one to three hours. Workers, however, are rarely subjected to this "model" polygraph test. Workers can testify that accuracy is not the only thing that suffers from these abbreviated polygraph tests.

The UFCW is opposed to the employment use of all "lie detectors." Lie detectors do not work. They do not work because there is no scientifically identifiable response associated with lying.

Research spanning 20 years has demonstrated that there is no scientific basis for polygraphs. In November of 1983, at the request of Representative Jack Brooks (D-TX), Chairman, House Committee on Government Operations, and Representative Frank Horton (R-NY), the ranking Minority Member, the Office of Technology Assessment (OTA) reviewed and assessed the scientific evidence on the validity of the polygraph testing.

The focus of the OTA technical memorandum was not whether the polygraph test has been useful but rather is there a scientific basis for its use.

"OTA concluded that there is very little research or scientific evidence to establish polygraph test validity in screening situations, whether they be pre-employment, periodic or aperiodic, random or "dragnet".

Twenty years before the OTA report was released, the same House Government Operations Committee reported:

There is no lie detector; neither machine nor human. People have been deceived by a myth that a metal box in the hands of an investigator can detect truth or falsehood."

In 1974, with the passage of the Privacy Act, Congress created a Privacy Protection Study Commission. The Commission's final report in 1977 took a very strong stand against the use of "truth verification" devices, calling their use an "unreasonable invasion of privacy that should be summarily proscribed." The Commission recommended that a federal law be enacted to forbid an employer from using these devices to gather information from an applicant or employee. The Commission also suggested that Congress implement this recommendation by a statute that bans the manufacture and sale of these truth verification devices.

In addition to the studies pointing out the unscientific nature of these so-called "lie detectors", the UFCW believes substantial Constitutional rights questions are raised by the use of these devices in employment, including self-incrimination, unreasonable search and seizure and our fundamental tenet—innocent until proven guilty. Although we are not Constitutional scholars or experts, we feel these Constitutional guarantees serve as the foundation of basic human dignity. The assault on these Constitutional guarantees by the polygraph is an affront to workers' dignity.

The violations of personal privacy and Constitutional rights by these devices was probably best articulated by the late Senator Sam Ervin (D-NC) in a letter to the Subcommittee on the Constitution of the Senate Judiciary Committee:

"American citizens have been compelled to disclose all manner of personal information when subjected to these devices. They have been compelled to disclose these things despite the guarantees of the First Amendment which protects the rights of the individual to the privacy of his mind, to the free exercise of his right to speak, as well as his right not to speak his thoughts.

"Polygraph and other 'lie detector' testing used in pre-employment screening and after employment is secured violates the Fourth Amendment guarantee of the 'right of the people to be secure in their persons, houses, papers and effects against unreasonable searches and seizures.' These test instruments strip the subject bare of his thoughts in complete disregard of any expectations of privacy.

"Employers use these machines to try to compel the individual to disclose social and legal offenses despite the guarantee of the Fifth Amendment, which provides the right against self-incrimination. A 'lie detector' test to innocent citizens simply wanting a job reverses our cherished presumption of innocence. If any employee refuses to submit to the test, he is automatically guilty. If he submits to the test, he is faced with the burden of proving his innocence.

"Many persons, including the former Justice Goldberg, believe that the Ninth Amendment's reservation that "the enumeration in the Constitution of certain rights, shall not be construed to deny or disparage others retained by the peoples' clearly shows that the Founding Fathers contemplated that certain basic individual rights not specifically mentioned in the Constitution—such as privacy—should nevertheless be safe from government interference."

It should be pointed out that Senator Ervin's letter was sent in support of legislation banning the employment use of polygraphs and other "honesty" devices.

With questions arising regarding validity, constitutionality, ethics and the impact on employee morale and productivity, a reasonable question to ask might be—Why do employers choose to use these devices? Employers who use these devices can probably be divided into two categories: First, employers who have a sincere desire to hire the most honest employee possible and have been hoodwinked into believing that a polygraph test can tell whether an applicant or employee is honest, and, second, employers who wish to use these devices simply to intimidate their employees.

Whether by design, as in the case of those employers in the second category, or by accident, as in the case of the first category, intimidation is usually the result of these tests. By polygraphers' own admission, fully 90 percent of the recommendation by examiners not to hire an applicant comes from information revealed in the pretest interview, not from the result of the actual test. People were so intimidated by the polygraph that they revealed irrelevant but prejudicial information, and this information was used to deny them employment. It is also interesting to note that most polygraphing stops at the time clock.

In November 1977, the Subcommittee on Constitutional Rights of the Senate Judiciary Committee heard one of the most blatant cases of abuse by polygraphs. Donald Blews, a former store manager for a retail chain operating 106 stores in North Carolina, South Carolina, Georgia and Virginia, testified that pre-employment polygraph tests were used to discriminate against blacks. The polygraph was simply used to legitimize the discrimination.

Some states have attempted to license and regulate polygraph examiners in an attempt to control polygraph abuses.

Personnel Journal reported a survey in February 1978, which addressed the licensing issue. It found that "there is a substantially greater proportion of firms using the polygraph in states which legally prescribe licensing and training requirements for polygraph examiners than there is in states which do not regulate the practice in any way. Furthermore, there is a greater tendency for firms in regulated states to require (as opposed to request) the tests as a condition of employment or continued employment than exists in states where regulation has not been effected."

In the majority of states licensing polygraphs, anyone who buys a polygraph machine can go immediately into business. Sixteen states have no licensing requirements whatsoever. Current licensing laws do little to weed out the thousands of charlatans in this industry, and do little more than legitimize the process and inspire trust in a process where none in warranted.

In 1974, a report by Dr. Joseph Kubis, commissioned by the United States Army Land Warfare Laboratory, pointed out that examiners using their polygraph machines achieved accuracy rates of 76 percent. When examiners were asked to make a judgment simply on the basis of observation during questioning, that is without the charts, their personal judgments were correct 65 percent of the time. This figure certainly merits comparison with the score of fully "scientific" polygraph charts; it suggests that personnel managers using traditional interviews instead of polygraph charts could be accurate, without being abusive.

Usually, the sole responsibility for dealing with the problem of employee theft is delegated to the Security Department. The UFCW believes that the most effective role of security in deterring theft by employees is in communicating the roles that other departments, such as Inventory Control, Finance and Personnel, play in implementing company policy on theft. We do not believe that relying on the intimidation of American workers by pseudo-scientific devices is an effective and desirable method of controlling theft.

The UFCW is pleased to endorse in the strongest possible terms Representative Williams' H.R. 1524, as well as Representative McKinney's H.R. 1924.

In closing, we would like to acknowledge and thank Representative Williams for his leadership and his staff for their efforts in getting more than 150 House co-sponsors, as well as Representative McKinney for his role in keeping this issue before Congress. And, finally, Mr. Chairman, we would like to thank you for these hearings—the first step in a process that hopefully will protect all workers from these intrusive and intimidating devices.

Mr. MARTINEZ. Mr. Harbrant.

Mr. HARBRANT. Thank you, Mr. Chairman, and members of the subcommittee. We appreciate the opportunity to testify on the use and abuse of so-called lie detectors in the workplace. My name is Bob Harbrant, and I am president of the Food & Allied Service Trades Department of the AFL-CIO.

Our department is comprised of 15 unions which represent over 3½ million workers, men and women, mostly involved in the service sector. And it is primarily in the service sector where those workers are increasingly subjected to the use and abuse of polygraphs, and it is on behalf of these workers that I come to Congress to strongly support legislation to ban these intimidating, intrusive and inaccurate tests from the workplace.

I am sure the subcommittee has heard, and will probably hear again today, that the use of lie detectors is essential in combatting a problem facing many businesses: internal theft. Internal theft is a problem. Theft by those within the organization can hurt, and even cripple, a business. Internal theft cheats the honest workers out of the fruits of their labors and must be combatted by both workers and management together with all reasonable means available.

The subcommittee has probably heard, and may hear again, astronomical estimates as to the losses due to employee theft. A favorite that has appeared frequently in previous congressional testimony precisely pinpoints the annual loss at $15 to $50 billion. This estimate range alone speaks eloquently of how questionable the supporting data is for a questionable mechanical device for mental machination.

The truth is no one really knows how much it is. A study conducted by the National Institute of Justice concluded that "approximations of employee theft seriousness to society are at best educated guesses." The same study went on to breakdown the nature of business losses. Their study estimated that securities fraud, corporate kickbacks, embezzlement, and insurance fraud cost businesses three times the amount of money than employee pilferage. Shoplifting losses cost businesses more than one-half the losses attributable to employee theft.

I mention these findings to put employee theft in perspective with other forms of business loss, and what constitutes reasonable means for controlling these losses. Needless to say, you don't find many polygraph examinations being conducted in corporate board rooms. Nor do you find many companies polygraphing their customers. And I might add, Mr. Chairman, we obviously would not support polygraphing in these instances, either. Yet, if business losses figures justify polygraphing employees, it would certainly justify strapping corporate executives, directors, and customers to these machines.

Polygraphing employees is neither the proper nor the best way for employers to reduce these losses. The National Institute of Justice study on employee theft made some important conclusions regarding how best to combat the problem, and I quote:

> More importantly to companies interested in reducing theft and counterproductive behavior is the sensitivity to the perceptions and attitudes of the workplace. In short, we found those employees who felt their employers were genuinely concerned with the workers' best interests reported the least theft and deviance.

The study concluded that, and again I quote:

> We found that applying the law enforcement model to theft does not work very well. For example, assessing previous theft activity outside the work setting by using polygraph exams has little relevance to future workplace behavior.

In short, Mr. Chairman, the best way to control these losses is through good employment practices. We strongly feel that polygraph testing is not a good employment practice by anyone's definition. The machines don't work. And as a result of employers' erroneous reliance on this 20th century witchcraft, hundreds of thousands of workers are denied employment, branded "thief" and "liar" and labels which haunt them throughout their entire personal and professional lives.

There is a tendency for attention to focus on the abuses associated with polygraph testing, and there are clearly documented cases of the test being used for intentional race discrimination. The media has extensively covered cases in which sexual misconduct occurs during examinations, and the intrusive nature of many of the questions asked, ranging from sexual activity to those dealing with political or union beliefs. These are egregious violations of workers fundamental rights and are, in fact, an affront to basic human dignity.

But the vast majority of wrongs flowing from these tests are not attributable to these kinds of questions. The vast majority of wrongs are inflicted by the simple fact that the machines mislabel innocent people as liars and that both employers and employees are misled into believing the machine can distinguish truth from deception and can distinguish deception from nervousness, anxiety, fear or intimidation.

In State after State the polygraphers have tried to divert attention from the real problem—the machines just don't work. In some States they have successfully convinced legislators that the polygraph problems will be solved by licensing statutes or that statutes will prohibit asking certain questions. But in those States the use of polygraphs continues to increase. The number of workers wrongfully denied employment opportunities continues to decline.

Mr. Chairman, the use of polygraphs on workers is the abuse. The testing procedure is founded on fear and implemented through intimidation. It is a psychological rubber hose which has no place in today's work force.

For a moment, try to put yourself in the position of the worker. You apply for a job and everything goes well. You are told the job is yours, but first you have to pass a lie detector test. You have nothing to hide and you want the job, so you agree. You take the test, and then you are informed that you failed. You are a liar, unfit for employment. Now you are in the position of feeling that you have something to hide. This is the saddest irony of the process. You told the truth in the test but were branded a liar and a thief; and now to get any job at all, you feel you have to lie about failing the lie detector.

Numerous polygraph victims have described feelings similar to those of Mr. Stanley—comparing taking the polygraph to being marched to the electric chair. It is similar: wires are attached to your body, tubes strapped around your chest, the examiner/executioner stands behind you and your fate is in his hands. I have no doubt that through sheer intimidation some polygraph exams result in confessions of theft or other undisclosed information. But so would the rack, and so would thumbscrews—and none of these devices are appropriate in today's work force.

It is time to send the polygraph to the Smithsonian exhibition on medieval horrors and give today's workers the dignity and the self respect they deserve in employment.

Mr. Chairman, Congress has a history and a duty of setting uniform workplace standards for American workers. I urge the subcommittee and the Congress to act expeditiously on this issue and summarily proscribe the use of lie detectors in the private sector employment.

Finally, Mr. Chairman, we oppose theft. We do not condone theft, and we favor sound procedures for eliminating theft. We oppose lies. We do not condone lies, and we support efforts to wipe out lies. As Mark Twain said, when in doubt tell the truth. The truth is lie detectors do not always tell the truth. The truth is employers who require the tests are not always truthful about the reasons for them. The truth is that workers have been ruined by half truths, and only after it is too late it is discovered that someone got hold of the wrong half.

While clearly the Ten Commandments cover a multitude of things, the reality is that all citizens know they must be protected by laws to enforce them. And that is the truth.

Thank you, Mr. Chairman.

Mr. **Martinez**. Thank you, Mr. Harbrant.

[Prepared statement of Robert F. Harbrant follows:]

Prepared Statement of Robert F. Harbrant, President, Food & Allied Service Trades Department, AFL-CIO

Thank you, Mr. Chairman, and members of the subcommittee, for inviting me to testify on the use and abuse of so-called "lie-detectors" in the workplace. My name is Bob Harbrant, and I am the President of the Food & Allied Service Trades Department of the AFL-CIO.

Our Department represents fifteen national and international unions, with a membership of more than 3½ million working men and women, who work primarily in the service sector. It is these service sector workers who are increasingly subjected to the use and abuse of polygraphs, and it is on behalf of these workers that I come to Congress strongly supporting legislation which would ban these intimidating, intrusive, and inaccurate tests from the workplace.

My statement is divided into four sections. Section I deals with the employment and law enforcement use of polygraphs. Section II gives an overview of past federal legislative efforts to prohibit or limit polygraph use, and also reviews the current status of state limitations and prohibitions. Section III provides a survey of the field and laboratory studies conducted on the validity of polygraph testing, and section IV reviews the growing use and abuse of other sorts of so-called "lie-detectors"—the voice analyzers.

Attached to my statement for the subcommittee's convenience is Appendix A, which gives a state-by-state summary of existing state statutes, and a Bibliography for the in-text citations to authorities.

I. USE OF THE POLYGRAPH

Introduction

The polygraph is the result of a combination of devices invented for medical and scientific purposes. The principal components of the standard polygraph (the blood pressure cuff, pneumatic chest tube, and galvanic skin response indicator) were invented to further medical knowledge and facilitate medical diagnoses. Their inventors claimed nothing more than that their devices could measure certain physiological actions.

In 1895, however, an Italian psychiatrist and criminologist named Cesare Lombroso claimed he could dected a lie by measuring the changes in a person's blood pressure (Lombroso, incidentally, also claimed "criminal types" could be distinguished by certain physical characteristics, including the shape of the skull). Others followed Lombroso's lead, and by 1926 the basic polygraph was complete.

The standard polygraph has three parts: a blood pressure cuff, a galvanic skin response indicator, and a pneumatic chest tube. The blood pressure cuff is attached to a person's upper arm to record changes in blood pressure. The galvanic skin response indicator measures changes in the skin's electrical conductivity, which increases when a person perspires. It consists of two electrodes which are attached to the index and second fingers of one hand. The pneumatic chest tube is strapped around a person's chest to measure changes in breathing pattern. Other components are sometimes added to the standard polygraph. For example, some polygraphs include a pneumatic tube which is stretched around a person's throat to gauge swallowing, contractions of the throat, and voice muscle tension. Some of the most "sophisticated" polygraphs can be connected to chairs with seats and arm rests wired to detect muscle pressure and body movements. (Id., p. 19).

The use of polygraphs has tripled in the last ten years. Americans are subjected to over a million polygraph examinations every year, and at least a third of those examinations are administered to workers and job applicants (see Office of Technology Assessment (O.T.A.) Study, p. 25). The growing problem of polygraph and other so-called "lie detector" testing has been treated as a constitutional issue, a privacy issue, and a civil rights issue. But the single most common use of the polygraph is in employment, and the problem has become, first and foremost, one of employment opportunities. Polygraphs have become vehicles for employee intimidation and for screening out employees of political or union beliefs different from those of a particular manager. Jobs are too important, and in today's economy too scarce, to allow an inaccurate machine to dictate the employment fate of hundreds of thousands of Americans. It is time for an outright prohibition of these inaccurate and intrusive machines from the workplace.

Employment use

Though the Constitution and the courts protect American citizens against polygraph machines in the hands of law enforcement officials, American workers enjoy no protection by the Federal Government against polygraph machines in the hands of private employers. As a result, private employers are responsible for more polygraph examinations every year than either criminal justice investigators or the Federal Government. (O.T.A. Study, p. 23).

Polygraphs are used by a variety of businesses. But they are particularly population businesses where the risk of theft and fraud are high and employee turnover is high. (O.T.A. Study, p. 25). For example, banks and investment firms, mail order houses, discount shops, restaurants, clothing and shoe stores, supermarkets and department stores are all heavy users of polygraphs because employees in those businesses handle large sums of money. Belt and Holden found that fifty percent of the commercial banks and fifty percent of the retailers that responded to their survey reported using polygraphs, and these businesses are also more likely to test *all* job applicants and employees instead of a sampling. (Belt and Holden, p. 86).

The list of businesses that subject their employees to polygraph examinations covers the whole spectrum of American business. Electronic and chemical companies use polygraphs because they produce expensive products and worry about industrial espionage. Drug and liquor manufacturers, hospitals and doctors' offices use polygraphs to prevent the theft of narcotics, alcohol, and other federally regulated products. Every type of business has found a use for polygraphing employees: copper refiners, rubber manufacturers, delivery companies, steel producers, freight movers, meat packers, and food and oil processors.

Belt and Holden found that 34.5% of the companies that reported using the polygraph use it in periodic surveys of employee honesty, and 34.5% use polygraphs for employment application verification. Of the companies that reported using polygraphs, 89% use them in cases of specific thefts or other irregularities.

One of the most disturbing aspects of the use of polygraphs by employers is the unlimited range of questions employees are expected to answer when they are strapped to a machine. Employees and job applicants who have undergone polygraph examinations have been asked about family problems, levels of job satisfaction, sexual preferences, whether the employee has ever been tempted to steal, intended length of stay on the job, personal finances, drinking habits, sexual activities, political beliefs, and marital relations. (O.T.A. Study, p. 32). Many unions have reported cases in which polygraphs have been used to quiz employees on their union activities, in violation of federal labor law. Polygraphs may also be used to force employees to inform on their fellow employees and to discriminate on the basis of race and sex. (O.T.A. Study, p. 31).

One person's testimony before the Labor-Management Subcommittee of the House Committee on Education and Labor shows how employers can use the polygraph to explore the private lives of their employees and prospective employees:

"During the test, he asked me if I'd ever stolen from an employer and what the dollar value was. He asked me questions, if I had sex with my wife the night before. And I told him that was none of his business. He just said, 'just answer yes or no.' He asked me if I had a girlfriend, and I again told him that I didn't think it was any of his business. And he was getting a little bit mad at me for not just answering yes or no, and he began telling me again, 'just answer the questions yes or no.'

"And so he asked me also if I liked extramarital sex, and I again told him this was none of his business. Before he could jump in and interrupt me and tell me just to answer yes or no, I told him, 'Well, I guess I don't have a girlfriend, so I guess I'm not involved in extramarital sex!' His attitude was a little hostile.

"And he told me that it was up to him whether I was hired or not at Coors Co., and that got my dander up . . .

"When I finished the test, I felt degraded, and I was disgusted and mad and just darn glad to be off it. And I also told him that he'd never get me in one of those things again. He won't." (Haze, Vol. III, 40). (Pressures in Today's Workplace, pp. 16–17).

Unfortunately, many workers and job seekers feel compelled to answer all of the polygraph examiner's questions because they know that refusal to answer a question (or refusal to take the examination at all) can mean the loss of a job.

Some of the reasons employers give for using polygraphs to screen job applicants are:

To verify the truth of employment applications;

To eliminate potential claims for unemployment insurance, workmen's compensation and disability benefits;

To reduce employee turnover;

To screen out potential thieves;

To prevent industrial espionage; and

To reveal undetected crimes.

Employers who use the polygraph for on-going surveillance of their employees give these reasons for doing so:

To keep workers honest;

To promote better employer-employee relations;

To rehabilitate valued employees whose larcency could otherwise cost them their jobs;

To increase savings and provide larger employee benefits;

To lower the cost of bonding employees;

To protect innocent employees; and

To screen out misfits.

Employers who use the polygraph claim they need it to combat employee theft. Even well-meaning employers have been duped into believing that the polygraph is a fast, cheap and easy solution of their problems. However, according to the Congressional Office of Technology Assessment, there do not appear to be any formal cost-benefit analyses which show that use of polygraphs reduces employee crime, and no research has been done on the predictive validity of the polygraph. (O.T.A. Study, p. 31). In addition, a comprehensive examination of employee theft by John P. Clark of the University of Minnesota and Richard C. Hollinger, commissioned by the U.S. Department of Justice's National Institute of Justice, concluded: ": . . . assessing previous theft activity outside of the work setting (by using polygraph exams) has little relevance to future workplace behavior. However, checking on one's previous pattern of employment history and dedication to a former employer are probably much better indicators." (Clark and Hollinger, p. 38).

Estimates of employee theft (which are used to justify use of the polygraph) vary widely, and seem to depend more on the motives of the estimators than on any objective collection and analysis of credible data. The National Retail Merchants Association, for example, claims that employees in their member companies alone steal forty billion dollars every year from their employers. ("Business Buys the Lie Detector," p. 101). However, the United States Department of Commerce estimated that "inventory shrinkage" (used as a measure of all crimes against business) for all businesses totaled $26.2 billion in 1976. (Clark and Hollinger, p. 4). Inventory shrinkage, however, represents *all* inventory losses to business, and employee theft is only one of many sources of inventory shrinkage. As Clark and Hollinger point out:

". . . even if one can arrive at an exact inventory shrinkage figure (usually expressed as a percent of total sales), the proportion of the figure which is attributable solely to employee theft remains intertwined with other confounding sources of loss. Factors such as clerical and billing errors, conventional thefts and shoplifting also contribute to the total inventory shrinkage level. Most inventory control experts will privately admit that parceling out the effect of employee theft from these other alternative sources of shrinkage virtually has been an impossible task." (Id., pp. 4 and 6).

The Congressional Office of Technology Assessment cites an estimate of ten billion dollars for "internal crime" in private industry annually. (O.T.A. Study, p. 31). But even that figure may exaggerate the extent of employee theft, since "internal crime" presumably encompasses other acts as well. American Management Associations estimates that employee pilferage probably ranges from five to ten billion dollars a year. (Clark and Hollinger, p. 5). But none of these figures represent anything more than mere guesstimates, and those who wish to justify polygraphing employees have more reason than others to exaggerate the figures. As Clark and Hollinger point out: "Despite the fact that employee theft is generally viewed as a problem of significant consequence, little reliable data exist regarding the phenomenon. The economic impact figures . . . seldom go beyond the level of alarmist rhetoric." (Id., p. 6).

Employers use the polygraph because they believe it is cheaper and faster than other methods of checking employment applications or controlling employee theft. The polygraph may be a dreaded machine to American workers, but to their employers it is simply a tool of convenience. According to Belt and Holden's survey of major U.S. Corporations, polygraph users rated efficiency first and moral or ethical considerations last among their reasons for using the polygraph. (O.T.A. Study, p. 31). In contrast, those corporations which do not use polygraphs cited moral or ethical implications, validity and reliability considerations, cost, and the belief that polygraphs are unnecessary and inappropriate in the business setting, as their reasons for not using the polygraph. (Belt and Holden, p. 86).

Companies which use polygraphs on their employees are looking for a "quick fix." The problems which they hope to solve by resorting to the polygraph could be addressed through less objectionable (and probably more effective) means which would benefit both employers and employees. Clark and Hollinger suggest that factors such as fairness in employer-employee relations, ethical behavior by higher management, adequacy of communication, recognition of quality performance, and competence of supervisors may reduce theft among employees. (Clark and Hollinger, p. 25).

It is clearly possible to run a profitable business, even a retail business, without resorting to the polygraph—J.C. Penney and Sears, Roebuck are among the many which do not use polygraphs, because they know it is possible and preferable to make employment decisions and protect company assets by using less objectionable methods. (Pressure in Today's Workplace, pp. 18–19).

As Clark and Hollinger point out:

> More importantly to companies interested in reducing employee theft and counterproductive behavior is a sensitivity to the perceptions and attitudes of the workforce. . . . In short, we found that those employees who felt that their employers were genuinely concerned with the workers' best interests reported the least theft and deviance. When employees felt exploited by the company or their supervisors (who represent the company in the eyes of the employees), we were not surprised to find employees most involved in correcting this perception of inequity or injustice by acts against the organization. (Clark and Hollinger, p. 36).

Employers who need to protect company assets can effectively do so without the polygraph through a variety of means including:

Good recordkeeping;
Attractive discounts for company products;
A healthy organizational climate;
Loss prevention systems that protect assets without abusing employees;
Good management;
Senior management that is honest in its dealings with both employees and customers.

Likewise, employers can make effective employment decisions with careful interviewing procedures, clearly stated job requirements, and testing for specific job skills and talents. (Pressure in Today's Workplace, p. 19). Polygraphs are not an evil of necessity; they are simply convenient.

Law enforcement Use

Law enforcement agencies were among the first to use the polygraph, and to this day one of the major uses of the polygraph is for investigations by law enforcement agencies and private security forces in specific allegations of criminal acts. In these situations a polygraph is typically used only after a preliminary investigation has narrowed down a list of suspects, and it is used to question suspects about a specific incident or issue. (O.T.A. Study, p. 97). Typical cases in which polygraphs are used by law enforcement agencies include rape, kidnapping, and alleged illegal conduct by public officials. (Id , p. 25).

Courts have imposed restrictions on the use of polygraphs by law enforcement agencies, however, to protect individual consitutional rights. For example, a law enforcement agency cannot legally require a person to take a polygraph examination, and as a rule, the information gathered from an examination cannot be used as evidence in a judicial proceeding unless both the defendant and the prosecution agree—and in some courts, not even then. (Pressures in Today's Workplace, p. 15).)

II. FEDERAL AND STATE POLYGRAPH LEGISLATION

Federal Legislation

From the 93rd Congress through the present, over forty bills were introduced relating to the use of polygraphs. Most of the bills seeking a prohibition of polygraph use did so couched in terms of constitutional rights and protection against the invasion of privacy. As a result, these bills invariably were referred to the Judiciary Committee, often with joint referral to the Education and Labor Committee in the House. Many of these bills sought to prohibit both Federal and private sector use, with a variety of exemptions for national security agencies and contractors.

By the 96th Congress, the proponents of private sector use of polygraphs began introducing "restrictive" legislation, designed to curb the abuse but not the use of polygraphs. By limiting the types of questions allowed, prescribing procedures and safeguards, and granting limited "rights" to those subjected to the tests, proponents of the polygraph hoped to legitimize the practice by regulating the process, and lowering the incidence of abuse.

In the 97th Congress, polygraph proponents went a step further by pushing a bill not only limiting the questions asked and prescribing the procedures, but also prescribing a minimal requirement that cardiovascular, respiratory, and galvanic skin responses be recorded, and prohibiting "surreptitious" examinations. These additional requirements outlawed the fastgrowing "truth" device competition of the polygraphers. The voice-stress analyzer (VSA) and its progeny purport to detect truth or deception from "micro-tremors" in the voice. By requiring the three physiological measurements and forbidding surreptitious testing, the polygraphers were in effect attempting to ban the competition.

In 1977 and 1978, the Senate Judiciary Committee held four days of hearings on Senator Bayh's "Polygraph Control and Civil Liberties Protection Act" (S. 1845). The Committee printed a 653 page report (GPO stock #052-070-04772-1) on the hearings. The statements of the witnesses and the content of the exhibits give a clear indication of the parameters of the debate, and the casts supporting and opposing the polygraph. The practitioners and frequent procurers of such services defended the accuracy of the devices and justified their use as essential to curb employee theft. The opponents condemned the devices as intrusive, intimidating, ineffective and inaccurate, and violative of citizens' civil liberties.

Previous bills frequently attempted to address both Federal and private polygraph use and abuse simultaneously, resulting in combined opposition and multiple committee referrals. While this issue involves civil and constitutional rights, it is first and foremost one involving employment opportunities, and denial of employment opportunities by inaccurate and often abused procedures.

Representative Williams' bill (H.R. 1524) treats the issue strictly as one of employment opportunities, and has received single committee referral. Without getting caught in a debate about whether there is a constitutional right to privacy, the bill prohibits an insidious employment practice that wrongfully denies tens of thousands of job opportunities annually.

State legislation

Massachusetts was the first state in the union to ban compulsory polygraphing in the workplace by providing in 1959 that: "No employer shall require or subject an employee to any lie detector test as a condition of employment or continued employment" (Annotated Laws of Massachusetts, Chap. 149, Sec. 19B). (For a summary of all the state statutes restricting the use of polygraphs in employment, including the current Massachusetts law, see Appendix A of this document). During the following ten years other states followed Massachusetts' lead and enacted varying forms of legislation designed to protect workers and job applicants from the polygraph and other forms of so-called "lie detectors": California (1963); Oregon (1963); Alaska (1964); Rhode Island (1964); Hawaii (1965); Washington (1965); Delaware (1966); Maryland (1966); New Jersey (1966); Connecticut (1967); and Pennsylvania (1969).

Today, the use of "lie detectors" in the workplace is limited by statute in twenty-two states plus the District of Columbia. State statutes generally seek to protect employees and applicants for employment from being required to take lie detector examinations. But half the states which forbid an employer to require a lie detector examination allow an employer to solicit or request the same examination: California, Hawaii, Idaho, Iowa, Maryland, Montana, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington.

California, for example, forbids an employer to "demand or require" a lie detector examination, but says nothing that affects employers who would "merely" request such a test-allowing an employer the right to pressure employees and job applicants with the implicit threat of the loss of employment for those who refuse to avail themselves of the opportunity to take the test. For example, an employer can tell his employees that they are suspected of stealing but they will not be fired if they can prove their innocence by some means, such as by taking a polygraph examination.

Other states have forbidden employers to either require or request employees and prospective employees to take lie detector examinations: Connecticut, Delaware, Maine, Massachusetts, Michigan, Minnesota, New Jersey, West Virginia, and Wisconsin.

However, even these states allow employees and job applicants to "voluntarily" take lie detector examinations. Undoubtedly the drafters of these laws felt it would only be fair to allow employees and job applicants to prove their innocence by submitting to lie detector examinations. Unfortunately for these "volunteers," the polygraph can be as likely to condemn an innocent and truthful person as it is to clear him (see Section III of this testimony for a discussion of studies which show that the false positive rate of the polygraph may be as high as fifty percent).

These state statutes speak eloquently of the desire of state legislators to protect employees and those who seek employment from the indignities and dangers of so-called "lie detectors." But these state prohibitions and restrictions are inherently inadequate. Many employers skirt state law by simply hiring in a neighboring state with no restrictions, and then "transferring" the employees into the State which has lie detector restrictions. As long as neighboring states allow job seekers to be polygraphed, applicants for employment can simply be required to cross a nearby state border to submit to what their own state forbids. Chain stores which operate in more than one state find it particularly easy to evade these state laws. This simple circumvention of state laws can only be stopped with Federal legislation. Otherwise, employers who are intent on subjecting their employees and prospective employees to polygraphs and other "lie detectors" will continue to find it is a simple and inexpensive proposition to evade the law merely by crossing state borders.

Twenty-six states have imposed various requirements for licensing polygraphers, either as the sole legislative "protection" against abuse, or in conjunction with other restrictive statutes: Alabama, Arizona, Arkansas, California, Florida, Georgia, Illinois, Iowa, Kentucky, Maine, Massachusetts, Michigan, Mississippi, Montana, Nebraska, Nevada, North Carolina, North Dakota, Oregon, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, and West Virginia.

However, granting formal legal recognition in the form of state licenses to individuals who ply their trade in a field where validity is so seriously in doubt raises serious concerns about the role of governments in legitimizing a very questionable employment practice.

Licensing laws are counterproductive if the goal of legislators is to protect citizens from abuse at the hands of "lie detectors." Licensing requirements cannot ensure the validity of the examinations. The dangers of "lie detectors" result from much more than the qualifications of the individuals who administer the tests. The danger, and the irony, of polygraph licensing statutes is that they legitimize the machines, their operators and the entire pseudo-scientific process of "lie detecting. The result of this erroneous and misguided legitimation is an increased use of these "lie detectors." A survey reported in Personnel Journal in February, 1978, makes the point succinctly:

"Among all firms surveyed there is a substantially greater proportion of firms using the polygraph in states which legally prescribe licensing and training requirements for polygraph examiners than there is in states which do not regulate the practice in any way. Furthermore, there is a greater tendency for firms in regulated states to require (as oppose to request) the tests as a condition of employment for continued employment than exists in states where such regulation has not been effected."

Thus licensing statutes thwart the best intentions of their supporters. They begin as efforts to protect people and yet result in even greater abuse. The legislative histories in several states show legislators first tried to eliminate the abuses in employment by requiring the licensing of operators. But problems persisted and legislators passed even more restrictive statutes. Statistics indicate the abuse of polygraphs in employment has worsened, not improved, despite well-intentioned statutes in several states. The time has come for outright Federal prohibition of this abusive employment practice.

III. VALIDITY

Polygraph "validity" is the extent to which the polygraph can accurately detect truth or deception. In other words, "validity" is the measure of whether the polygraph can do what its proponents claim it can do.

There are basically two types of validity studies: "Field" studies and "laboratory" studies. Field studies of polygraph validity are studies of actual cases in which polygraph examinations have been administered (usually to criminal suspects), and the researcher has no experimental control over the circumstances in which the crime or other event happens. In most field studies of polygraph validity the polygraph examiner's decisions are compared to a subsequent determination of guilt or innocence (such as a judicial decision or a confession), in order to determine whether the polygraph examiner's decision was correct. This is probably the greatest weakness of field studies: the subsequent decisions of guilt or innocence may be wrong because courts may release quilty individuals, convict innocent people, dismiss cases for lack of evidence, and accept guilty pleas that result from plea bargaining. (O.T.A. Study, p. 39).

Laboratory studies of polygraph validity, on the other hand, use field methods of polygraphy, but in simulated and controlled situations in which the researcher sets up a mock "crime" and assigns "guilt" or "innocence" with the collaboration of the polygraph examinees. (O.T.A. Study, p. 61). The weakness of such laboratory studies is that the mock "crimes" do not present the "guilty" subject with any serious consequences for being "caught" by the polygraph, and thus the mock "criminals" may not display the same emotional reactions found in real criminals or liars. (Taylor, p. 241).

Considering the extent to which polygraphs are used by private employers, government, and law enforcement agencies, surprisingly little serious research has been done on polygraph validity, particularly as polygraphs are used by business. The results of polygraph validity studies vary widely, depending on the methodology used, the motives of the researchers, and many other factors. It would be impossible to assign any single number as the single and correct validity level of the polygraph. The best way to understand the validity of the polygraph is to review and analyze several studies as a whole.

Laboratory studies

1. In 1975 two researchers from the University of Utah named Barland and Raskin conducted a study of polygraph validity involving seventy-two student volunteers. A mock "crime" was set up involving the theft of a valuable object or a small sum of money. Half the students were assigned a "guilty" condition and the other half were assigned an "innocent" condition. Each student was then administered a polygraph examination.

The result was that 35% of the polygraph examinations were inconclusive and 12% were incorrect. Of the incorrect examinations, two-thirds were false positives (that is, two-thirds were "innocent" subjects classified as guilty by the polygraph) and one-third were false negatives (that is, one-third were "guilty" subjects classified as innocent by the polygraph). Only about half (53%) of the test subjects were correctly identified by the polygrapher. (O.T.A. Study, pp. 655–66).

2. In 1978 an extensive validity study by Podlesny and Raskin indicated that behavioral observations alone were more effective than the polygraph in correctly identifying "guilty" subjects. This study required polygraphers to make decisions of guilt or innocence based on visual observation of the test subjects, without using the polygraph. Visual observations alone produced these results: a) among the "guilty" subjects, 86% were correctly classified; b) among the "innocent" subjects 48% were correctly classified. The polygraph, on the other hand, produced these overall results: 10% inconclusive; 10% incorrect (four fifths false negatives and one-fifth false positives); and 80% correct. Thus, in correctly identifying "guilty" subjects, the be-

havioral observations of the polygraphers were more accurate than the polygraph overall. (Id., pp. 66–67).

3. In 1981, Barland conducted one of the few validity studies ever done on the use of polygraphs in pre-employment screening. His subjects were military personnel who worked in the intelligence field. He told about half of them to lie on one of the relevant questions during the polygraph examination, and those examinees were each offered twenty dollars if they could appear truthful in the examination.

Depending on which of three methods of polygraph chart interpretation was used, these were the results:

For Truthful Subjects:
(1) 15–23% incorrect
(2) 04–19% inconclusive
(3) 62–77% correct

For Deceptive Subjects:
(1) 13–23% incorrect
(2) 07–27% inconclusive
(3) 50–80% correct

(Id., pp. 76–77).

In its 1983 report entitled "Scientific Validity of Polygraph Testing," the Congressional Office of Technology Assessment (O.T.A.) stated that: "The results of the Barland study raise serious questions about the usefulness of directed lie control questions in screening procedures as well as, in general, the validity of polygraph testing for pre-employment and counterintelligence purposes, especially if alone." (Id., p. 77).

4. One of the most definitive laboratory studies of the reliability of "truth verification devices" was commissioned by the U.S. Army Land Warfare Laboratory. This report, conducted by Dr. Joseph F. Kubis of Fordham University, was designated as classified material by the Army. But under pressure from former Congressman Froelich of Wisconsin, it was declassified and released to the public in 1974.

The results of the study are illuminating. The original group of subjects was divided in triads of three basic roles (Thief, Lookout, Innocent Suspect) in a simulated theft situation. The experienced polygraphers made incorrect evaluations 24% of the time. When other examiners rated the polygraph charts without having seen the subjects being tested, accuracy dropped to between 50 and 60%.

On the other hand, it is interesting to note how accurate the polygraphers' judgments were when made on the basis of simply observing subjects during questioning, without using the polygraph. When the original polygraph examiners were asked immediately after the test for an opinion, their personal judgments were right 65% of the time. This figure certainly warrants comparison with the 76% rating of fully "scientific" polygraph test results achieved by the experienced polygraphers using the polygraph; it suggests that the personnel manager using traditional interviews instead of the polygraph would hardly be at a disadvantage.

Field studies

The first three field studies of polygraph validity examined here (kleinmuntz and Szucko, 1982; Horvath, 1977; Barland and Raskin, 1976) share several characteristics. All three meet sound standards of scientific credibility. All three used criminal suspects. All three used reasonable criterion data to verify the polygraph results by using either subsequent confessions or the decisions of a panel of lawyers and judges. In all three of these studies the polygraph charts of the criminal suspects were independently re-scored by polygraphers who had not administered the original polygraph examinations. (Lykken, "Detecting Deception in 1984," p. 13). Finally, the results of all three studies show it is truly innocent people who suffer the most at the hands of the polygraph.

1. In 1982 Kleinmuntz and Szucko obtained the charts of one hundred polygraph examinations which had been conducted by the well known Reid Polygraph Agency in Chicago. Fifty of these charts had been verified as deceptive by the subsequent confessions of the examinees, and the remaining fifty had been verified as truthful by the subsequent confessions of other people. Polygraphers from the Reid agency then independently re-scored all one hundred charts. The polygraphers incorrectly classified fully 39% of the verified innocent examinees as guilty. (Id., p. 16).

2. In 1977 Horvath published a polygraph validity study using fifty-six polygraph examination charts from the files of a policy agency, all of which had been verified by subsequent confessions. Horvath had previously been the chief polygrapher for the Reid polygraph agency.

These polygraph charts were then re-scored independently by ten polygraphers. Of the innocent examinees only half (51%) were correctly scored as truthful. The overall accuracy obtained by the ten polygraphers was only 64%. (Id., p. 14). The innocent people would evidently have fared just as well had their "examiners" simply flipped a coin to determine their guilt or innocence, instead of using the polygraph.

3. In 1976 Barland and Raskin conducted a polygraph validity study as part of Barland's doctoral research. Barland administered polygraph examinations to ninety-two criminal suspects and Raskin then independently scored those charts. The guilt or innocence of the suspects was verified by an expert panel of one judge, two defense lawyers and two prosecutors who examined each suspect's dossier.

Based on the decisions of the expert panel, Raskin incorrectly classified 55% of the innocent suspects as deceptive. Raskin's average, overall accuracy was only 72%. Interestingly, Raskin had to score over 20% of the polygraph charts as inconclusive, and even then the polygraph was correct less than half of the time for the innocent suspects. (Id., pp. 13–14). Given Raskin's results, it is clear those innocent suspects would have fared better with a simple flip of a coin.

4. In 1971 Horvath and Reid conducted a polygraph validity study which is widely quoted by supporters of the polygraph (Reid was the founder of the Reid College of the Detection of Deception in Chicago). Horvath and Reid selected the charts of seventy-five verified polygraph examinations from the files of Reid's polygraph agency. Forty of those charts were then re-scored independently by ten polygraphers. Thirty-five of the seventy-five polygraph charts were not re-scored, because they were either "uninterpretable by even the most skilled examiner," or "dramatically indicative of truth or deception." (Id., p. 11).

Among the ten polygraphers who re-scored the forty charts, seven were experienced examiners. Those seven polygraphers were able to re-score 91% of the charts correctly. However, one should note the figure of 91% correct was based on the rescoring of a selected group of forty out of an original seventy-five charts. It would be a mistake to accept the results of this study as representative of the usual results obtained in the normal conduct of Reid's polygraph agency. (Id.).

As noted above, Kleinmuntz and Szucko (1982) also used polygraph charts from the Reid polygraph agency. Two reasons Kleinmuntz and Szucko's results (average accuracy of 73%) differed from Horvath and Reid's results (average accuracy 91%) are most likely because Kleinmuntz and Szucko's charts were selected by an independent investigator, and all of their charts were re-scored, instead of only a select number. (Id., pp. 16–17).

5. In 1981 Edwards, an employee of the Virginia State Crime Laboratory, conducted a polygraph validity study which involved mailing a questionnaire to all licensed polygraph examiners in Virginia, asking: (a) How many polygraph test did you administer in 1980?; (b) how many of these tests were later verified to your satisfaction?; and (c) how many of the verified tests were correct?

Forty-one (mostly police polygraphers) of Virginia's one hundred and forty-seven licensed polygraphers answered the questionnaire. They reported having administered 2,620 tests in 1980, averaging eighty-five tests for each active polygrapher. That figure does not include the kind of tests administered to job applicants since only thirteen percent of the private polygraphers answered the questionnaire.

The polygraphers claimed to have verified forty percent of their tests, and on these tests they claimed to have been correct over 97% of the time. (Id., pp. 12–13). The methodology and results of this study prompted the following response from Dr. David Lykken of Minnesota:

"It seems supererogatory to criticize this alleged study in detail. One wonders what would happen if one were to send a similar questionnaire to all licensed astrologers in the state of Virginia asking how many predictions they had made during 1980, how many had been "verified", and how many of these had proved correct." (Id., p. 13).

The Congressional Office of Technology Assessment (O.T.A.) reviewed ten field studies of polygraph validity and found the results of these studies varied widely. O.T.A. summarized its findings as follows:

> False negatives (i.e., classifying a deceptive person as truthful) varied from 29.4% to 0%;
>
> False positives (i.e., classifying a truthful individual as deceptive) varied from 75% to 0%;
>
> Inconclusive results varied from 0% to 25%.
>
> Correct guilty detections varied from 70.6% to 98.6%;
>
> Correct innocent detections varied from 12.5% to 94.1%;

(O.T.A. Study, p. 52).

In its November, 1983 publication, "Scientific Validity of Polygraph Testing," O.T.A. summarized its review of over thirty polygraph validity studies in charts which appear on pages 53, 63, and 64 of the O.T.A. study. For modified versions of those charts, see appendix A of this document.

The significance of a 90%, 80%, or 70% polygraph validity rate cannot be fully understood unless one comprehends what that figure means to the individuals, particularly the innocent individuals, who are subjected to the polygraph examinations. For example, O.T.A. determined the mathematical chance of false positives (incorrectly classifying an innocent person as deceptive) is greatest when polygraphs are used to screen people. The reason for this, according to O.T.A., is that in most screening situations only a very small proportion of the screened individuals are guilty. Thus, according to O.T.A., if typically one out of a thousand people is guilty, and we assume the polygraph is 99% accurate (an extremely high accuracy level which even the staunchest polygraph supporter could not defend), then the law of probability would result in one guilty person being correctly identified as guilty, but ten innocent people would be wrongly classified as guilty. (Id., pp. 5–6). If an accuracy rating of less than 99% is assumed (a safe assumption given the studies reviewed above), the incorrect classification of innocent people as guilty increases substantially.

Another example illustrates the problem:

Assume that five percent of the people being screened are actually guilty. Also assume a very high validity rate of ninety percent. In this situation, the polygraph would only have a thirty-three percent predictive value, since for every person correctly identified as deceptive, two innocent people would be wrongly classified as guilty. It is a matter of simple mathematics that in order to catch ninety percent of the guilty individuals, sixty-eight percent of the people who fail the polygraph test will have been telling the truth. To lower the false positive rate (the percentage of innocents classified as guilty), one would have to allow more guilty individuals to escape undetected. But as more guilty people are cleared of subspicion so as to protect the innocent, the reasons for using the polygraph in the first place disappear. (See O.T.A. Study, pp. 98–99).

Given the results of studies demonstrating validity rates much lower than 90 percent (Horvath, 1977=64%; Kleinmuntz and Szucko, 1982=73%), the negative impact of polygraph screening on innocent and truthful subjects is in reality probably far greater than in the two hypotheticals above, and the consequences are all the more disturbing.

As discussed above in Chapter One, private employers use polygraphs extensively in screening situations, both to screen applicants for employment and to screen large numbers of employees during investigations of suspected employee theft. Yet it is in precisely these types of situations that the validity of the polygraph is lowest, and most damaging to innocent people. Even the F.B.I. does not believe large-scale screening is an appropriate use of the polygraph for dragnet-type screening of large numbers of suspects or as a substitute for logical investigation by conventional means." (F.B.I. Polygraph Regulation 13–22.2(2), 1980, as cited in O.T.A. Study, p. 99).

The risks which the inaccuracy of the polygraph pose to innocent and truthful workers are exacerbated by the bias of the polygraphers who work for private employers. Professor Lawrence Taylor of the Gonzaga University School of Law describes the bias problem:

"Polygraphists are motivated to serve their paying clients. Since clients have an interest in identifying guilty suspects, the polygraphers must expect to uncover cases of deception. Governmental agencies and corporations that want to ferret out security risks or dishonest persons in their organizations expect the polygraphist to identify such people. These firms often also retain polygraphists for employment screening and "periodic honesty checks," a lucrative source of income for many polygraphists.

"The source of the problem is that such agencies may be more troubled by false negative errors—that is, errors that occur because a polygraphists classifies a guilty or deceptive employee as innocent or truthful—than by false positive errors. From the vantage point of a bank or security agency, it is far better to err or the side of caution and perhaps even fire (or not hire) a trustworthy person than to run the risk of retaining a potential theif. . . .

"This motivation is unmistakably communicated to polygraph firms in the form of client loyalty and referrals. But it seriously comprises the polygraphist's objectivity and biases the findings against the nonpaying client, who is likely to be an individual with limited resources and is likely to have the power of a repeat player." (Taylor, pp. 243–44).

Thus, because of the inaccuracy of the polygraph itself and the potential bias of polygraphers, innocent an truthful people are more likely to be misjudged than are the truly guilty. In 1979 Waid and his associates conducted a study which showed that highly socialized people (that is, people who have highly developed moral standards and consciences) tend to fail polygraph examinations even though they tell the truth. Conversely, poorly socialized people are more likely to "pass" a polygraph examination whether they tell the truth or not. (Id., p. 17). According to Dr. Lykken:

"The irony is that by basing more and more important social decisions on the results of polygraph tests we may be producing an effect opposite to that intended, firing the most honorable police officers, refusing to hire the potentially most reliable employees, putting highly socialized citizens into unemployment lines or even in prison, while staffing our security agencies with the under-socialized . . . or with those clever enough to know how to beat the polygraph." (Id., p. 18).

Supporters of the polygraph argue that the polygraph works because lying causes conflict in a person's mind, which causes fear and anxiety, which in turn causes physiological changes detected by the polygraph. They are at least partly correct in that the polygraph can detect physiological changes. But there is no such thing as a "lying response." There is no physiological response specifically and exclusively associated with lying.

When a polygraph detects a change in a person's physiology, that change can mean any of three different things: 1) The person told the truth but one of many human emotions (grief, anger, embarrassment, fear, etc.) caused the physiological change; 2) a neurotic pre-condition caused the physiological change; or 3) the person lied. (Privacy, Polygraphs, and Employment, p.7). Many different factors and conditions can affect the outcome of a polygraph examination and cause an honest person to be labeled a liar, or cause a dishonest person to escape detection. Physiological abnormalities such as blood pressure problems, heart conditions, colds and headaches can affect the outcome of the examination. Fatigue, drugs, alcohol, and body movements can also affect the polygraph (Id.).

Yet, despite all the evidence of the serious limitations of polygraph and the examiners who use them, our a million polygraph examinations are administered in the United States every year. Mathematical calculation of error rates and misclassification, applied on a national scale, translate into lost employment and lost employment opportunities numbering in the tens of thousands annually. Such high social and economical costs indicate that the prohibition of polygraph use in employment would be sound national employment policy.

IV. VOICE ANALYZERS

Though the polygraph may be the best known "lie detector," two other devides are becoming increasingly popular with employers seeking an inexpensive and uncomplicated way to test job applicants and employees. These devices are the Psychological Stress Evaluation (P.S.E.) and the Voice Stress Analyzer (V.S.A.). Both of these devices are used to detect lies by analyzing the human voice, but each analyzes different features of speech and they differ in design. ("The Use of Ploygraphs and Similar Devices by Federal Agencies," p. 6).

The P.S.E.:

The Psychological Stress Evaluator (P.S.E.) was invented by two former army intelligence officers, Charles McQuiston and Allan Bell, who have marketed their device since 1970 through Dektor Counterintelligence and Security, Inc., in Springfield, Virginia. Like the polygraph, the P.S.E. is supposed to be able to detect a lie by measuring involuntary physiological changes which are associated with stress. The P.S.E. measures the audible and inaudible frequency modulations (or "microtremors") of the human voice, and displays the results on a graph. To make the devide work, a tape-recording is made of a person's "yes" and "no" answers to a series of questions, and then a tape is played on the P.S.E. at one-quarter speed. If the P.S.E. detects microtremors in a person's voice, the machine's stylus will move erratically on the graph paper, supposedly showing that the person told the truth during questioning. If the P.S.E. does not detect any microtremors, then the stylus creates a tight pattern of vertical lines, supposedly showing that the person lied during questioning. The theory behind the P.S.E. is that lying causes stress, and stress causes an absence of microtremors in the human voice, which is detected by the P.S.E. (Id., pp. 5–6; and Jenkins, p. 55).

The V.S.A.:

The Voice Stress Analyzer (V.S.A.) was developed in 1970, at roughy the same time as the P.S.E.. The V.S.A. detects rapid variations in the vibrato or tremolo amplitude of speech, and electronically assigns numerical values to those variations. The V.S.A. then instantaneouly displays a number supposedly indicating whether a person lied or told the truth. The inventors of the V.S.A. claim that the changes in vibrato voice amplitude vary with changes in levels of emotional stress associated with lying ("The Use of Polygraphs and Similar Devices by Federal Agencies," p. 6).

Though the P.S.E. and the V.S.A. are designed differently and measure different qualities of speech, they are both "lie detectors" which are supposedly capable of detecting lies by analyzing the human voice. Voice analyzers have become increasingly popular as alternatives to the standard polygraph because they are compact, easy to operate, and can be surreptitiously administered without the subject's knowledge. Voice analyzers have few moving parts and they are wireless—there are no electrodes, no rubber hoses for the chest and abdomen, and no blood pressure cuffs to attach to an examinee. Voice analyzers are thus very unobtrusive. During an interview or interrogation only a small microphone is visible, and even that can easily be hidden. Moreover, voice analyzers do not even have to be used during an interview. An interview can simply be taperecorded (even over the telephone) and "analyzed" later by the voice analyzer (Id., p. 6; and Jenkins, p. 5).

The manufacturers of voice analyzers are well aware that their devices can be used unobtrusively and even covertly. A promotional pamphlet for a voice analyzer manufactured by the Hagoth Corporation of Issaquah, Washington, states: "In a covert interrogation . . . by following a few simple rules you can unerringly spot a liar." ("Business Buys the Lie Detector," p. 104). Charles Glazerman of Dektor believes that "The beauty of the PSE as opposed to the polygraph is that there is no artificial stress being induced." (Id., p. 104). Apparently Mr. Glazerman believes that his "lie detector" works better if a person is unaware that he or she is beingd examined. Even if voice analyzer manufacturers do not recommend using their products covertly, the very design of voice analyzers make it easy to use them covertly. For example, C.C.S. Communication Control, Inc., of New York City, sells a pocket-size voice analyzer. In an advertisement for its miniature "lie detector," CCS states: "Voice Stress Analyzer. This is the same high quality system used by professionals to detect truth from deception . . . but it is ultra miniaturized to carry in a pocket. To find if your employees are stealing . . . if your business associates are cheating . . . if your friends are really your friends . . . carry the Mini VSA wherever you go." (Advertisement in the New York Times, September 11, 1983).

Accuracy

J.W. Heisse, Jr., the president of an association of voice stress analysts, claims that the P.S.E. is 96% accurate. Mr. Heisse bases his claim on a study of fifty-two verified P.S.E. charts selected (twenty-seven of them by Mr. Heisse) for blind rescoring by twelve P.S.E. examiners. Five re-scorings were reported for each chart. (Lykken, "Detecting Deception in the 1984," pp. 9–10) This study prompted the following observations by Dr. David Lykken of the University of Minnesota:

"The faults of this study are legion. First, the "verification" of the tested person's actual guilt or innocense was essentially left to the original examiner's opinion. Secondly, if all of the re-scorers actually re-scored all of the charts, as should have been done, then more than half of these re-scorings are inexplicably left out of our account. Third, and fatal to the entire enterprise, the original charts to be rescored in this study of P.S.E. "validity" were selected first by the original examiners themselves and then apparently selected again by Heisse. If a professional P.S.E. examiner is invited to submit for formal rescoring verified charts from his collection, can we really suppose that he will offer charts that he scored incorrectly in the first instance?" (Id., p. 10).

Dr. Lykken adds that studies of P.S.E. accuracy by researchers who have no personal or professional stake in the results of their studies, and who use randomly selected P.S.E. charts, "have consistently found that pairs of trained 'analysts' cannot agree in their scoring of a truly unselected run of charts at much above chance levels." (Id., pp. 10–11).

One of the most definitive studies of "truth verification" devices, commissioned by the U.S. Army Land Warfare Laboratory and conducted by Dr. Joseph F. Kubis of Fordham University, examined the validity of voice analysis and polygraphs (see Chapter III of this document for a discussion of the study's results on polygraph validity). Dr. Kubis first set up a simulated theft and divided the original group of subjects into triads of three basic roles: thief, lookout, and innocent suspect.

The subjects were then administered P.S.E. examinations. Since three subjects were involved in the mock theft, the statistical chances of correctly identifying a subject as "guilty" or "innocent," based purely on chance, were obviously one out of three, or 33%. When the P.S.E. was used to individually determine each subjects' status, the P.S.E. was correct only 32% of the time—less than simple chance. When the three members of each triad were examined together, the P.S.E. was correct only 53% of the time. However, when the examiners determined a subject's "guilt" or "innocence" by simply observing the subject's behavior, the examiners were correct 65% of the time!

The results of scientific studies of voice analyzer accuracy should alarm and dismay any person subjected to such a test at work or as part of a hiring procedure. For in addition to the limitations of the machines, one must also consider the limitations of the people who use them. For example, Dektor (manufacturers of P.S.E.'s) give the purchasers of its machines a five day course on how to use the device. (Jenkins, p. 55). If a voice analyzer can be less accurate than pure chance even under laboratory conditions, one can only speculate as to the validity of such devices in the hands of employers anxious to "catch" employees or job applicants by using these "lie detectors," covertly or otherwise. Why do employers use these devices? Perhaps Richard H. Bennett, Jr., President of Hagoth Corporation (producers of voice analyzers) explained the true appeal of these "lie detectors" when he said: "This product appeals to the desire to buy a terrific toy." ("Business Buys The Lie Detector," p. 104).

Again, thank you, Mr. Chairman, for holding these important hearings on one of today's fastest growing forms of employee intimidation. I urge prompt action by the subcommittee on Mr. Williams, bill, H.R. 1524, and expeditious passage by Congress. Only when Congress summarily proscribes lie detectors from the workplace will workers regain the dignity and self-respect they deserve.

APPENDIX A—STATE STATUTES RESTRICTING THE USE OF POLYGRAPHS IN EMPLOYMENT

Alaska

Labor and Workers' Compensation, Lie-detector tests (Code Section 23.10.037).

No person may request or suggest to an employee or an applicant for employment, or require as a condition of employment, that the employee or applicant take an examination in which a polygraph or other lie-detecting device is used.

A person who violates this law is guilty of a misdemeanor and may be fined not more than $1,000, or imprisoned for not more than one year, or both.

California

Labor: Polygraph or lie detector test as condition of employment; advice of rights (Code Section 432.2); and Violation; misdemeanor (Code Section 433).

Section 432.2

(a) No employer shall demand or require any applicant for employment or prospective employee or any employee to submit to or take a polygraph, lie detector or similar test or examination as a condition of employment or to continue employment. The prohibition of this section does not apply to the federal government or any agency thereof or the state government or any agency or local subdivision thereof, including but not limited to, counties, cities and counties, cities, districts, authorities, and agencies.

(b) No employer shall request to take such a test or administer such a test, without first advising the person in writing at the time the test is to be administered of the rights guaranteed by this section.

Section 433. Any person violating this article is guilty of a misdemeanor.

Connecticut

Labor, Use of Polygraph (Code Section 31-51g.).

"Polygraph" means any mechanical or electrical instrument of any type used to test individuals for truthfulness.

It is illegal to request or require any employee or prospective employee to test individuals for truthfulness.

It is illegal to request or require any employee or prospective employee to take a polygraph examination as a condition of employment, or to dismiss or discipline in any way an employee for failing or refusing to take a polygraph examination.

Violators of this law shall be fined not less than two hundred fifty dollars not more than one thousand dollars for each violation.

Delaware

Labor; Employment practices (Code S704).

It shall be illegal to require, request or suggest that any employee or prospective employee take a polygraph, lie detector or similar test as a condition of employment or continuation of employment.

Whoever violates this law shall be fined not more than $500 or imprisoned for not more than 90 days, or both.

As used in this law, the term "lie detector" includes, but is not limited to, any electromechanical device which records or analyzes vocally produced sound frequency variations associated with stress for the purpose of determining the truth of any oral statement.

District of Columbia

Lie Detectors (Code Sections 36-801 to 36-803).

"Lie detector test" means any polygraph, lie detector, or other test which by any mechanical, electrical, chemical or physiological means attempts to determine whether a person is telling the truth.

No employer shall administer or use the results of any lie detector test in connection with the employment, application or consideration of an individual for employment. No employer shall have administered, inside the District of Columbia, any lie detector test to any employee or any person whose employment would take place in whole or in part in the District of Columbia.

Any employer who violates the law shall be guilty of a misdemeanor and subject to a fine of $500, and 30 days in jail, or both. Any employer who violates this law commits an unwarranted invasion of privacy and may be sued for damages. The amount of damages shall be established by the court, plus reasonable attorney's fees.

No contract or arbitration decision shall contain any provision in violation of this law.

Hawaii

Labor and Industrial Relations, Lie Detector Tests (Code Sections 378-21 to 378-22).

It shall be unlawful for an employee to take a polygraph or lie detector tests as a condition of employment or continued employment.

Any person who unlawfully requires an employee to submit to polygraph or lie detector test shall be fined not more than $1,000 or imprisoned not more than one year, or both.

Idaho

Labor, Polygraph Tests (Code Sections 44-903 to 44-904).

No person, firm, corporation or other business or representative thereof, shall require as a condition for employment or continuation of employment any person or employee to take a polygraph test or any form of a so-called lie detector test. A violation of this section shall be a misdemeanor.

Iowa

Labor and Employment, Employer-Employee Offenses (Code S. 730.4.).

"Polygraph" means any mechanical or electrical instrument of any type used to examine individuals for the purpose of determining truthfullness.

An employer shall not be require an employee or an applicant to take a polygraph examination as a condition of employment. Violation of this law is a simple misdemeanor.

Maine

Polygraph Examiners Act (Code 32 SS 7151 to 7169).

"Polygraph" means lie detector, polygraph, deceptograph, psychological stress evaluator or other device, regardless of what it is called, which is used to verify truth of statements.

No employer may require, request or suggest that any employee or applicant submit to a polygraph examination as a condition of employment or continued employment, or use the results of such an examination for hiring or employment purposes.

An employee may voluntarily request a polygraph examination in connection with his employment; but the results of that examination may not be used against the employee by the employer for any purpose. The employer must give the employee a copy of this law, and the examination must be recorded or a witness of the employee's choice must be present during the examination or both, as the employee requests.

Any person who violates any provision of this law is guilty of a Class D crime.

Maryland

Lie Detector Test (Code Article 100, S.95.).

An employer may not demand or require any applicant for employment or prospective employment or any employee to take a polygraph, lie detector or similar test as a condition of employment or continued employment.

Any employer who violates this law is guilty of a misdemeanor and subject to a fine not to exceed $100.

All applications for employment shall contain a notice which sets out the above two provisions of this law, and must be separately acknowledged by the signature of the applicant.

The Commissioner of Labor and Industry may institute, on behalf of any aggrieved applicant for employment, court action seeking injunctive relief or other relief including money damages, resulting from the violation of this law.

Massachusetts

Labor and Industries; Lie Detector test (Code 149 S.19B).

Any employer, who subjects any employee or applicant to a lie detector test, or requests such a test, shall be punished by a fine of not more than two hundred dollars. This section shall not apply to lie detector tests administered by law enforcement agencies as may be otherwise permitted in criminal investigations.

Michigan

Polygraph Protection Act of 1981. (Code Sections 37.201 to 37.209).

"37.203. Polygraph examinations; requesting, requiring, and administering to employee or applicant prohibited, waiver of prohibited practice prohibited; voluntary polygraph examinations

"Sec. 3. (1) Except as provided in this section, an employer or employment agency shall not as a condition of employment, promotion, or change in status of employment, or as an express or implied condition of a benefit or privilege of employment, do any of the following:

"(a) Request or require that an employee or applicant for employment take or submit to a polygraph examination.

"(b) Administer, cause to be administered, threaten to administer, or attempt to administer a polygraph examination to an employee or applicant for employment.

"(c) Require that an employee or applicant for employment give an express or implied waiver of a practice prohibited by this act.

"(2) This section does not prohibit an employee or applicant for employment from voluntarily requesting a polygraph examination.

"(3) If an employee or applicant requests a polygraph examination, this section does not prohibit an employer or employment agency from administering a polygraph examination as provided in subsection (7).

"(4) An employee or applicant for employment who voluntarily requests a polygraph examination shall receive from the employer or employment agency a copy of this section before the employee or applicant for employment voluntarily takes the polygraph examination.

"(5) An employer shall not refuse to hire an applicant for employment because the applicant refuses or declines a polygraph examination.

* * * * * * *

"(7) If an employee or applicant for employment voluntarily requests a polygraph examination, the examiner shall:

"(b) Inform the employee or applicant for employment of all specific question areas to be explored before their actual exploration during the examination.

"(c) Inform the employee or applicant for employment of all the following:

"(i) The employee or applicant for employment has the right to accept or refuse the examination.

"(ii) The employee or applicant for employment has the right to halt an examination in progress at any time.

"(iii) The employee or applicant for employment is not required to answer any questions or give any information.

"(iv) Any information the employee or applicant for employment volunteers could (sic) be used against the employee or applicant for employment, or made available to the employer, unless otherwise specified and agreed to in writing by the employee or applicant for employment.

"(d) Provide the employee or applicant for employment with a copy of the examination results and all reports or analyses done by the examiner which is shared with the employer.

"37.204. Action against employee or applicant based on opinion of untruthfulness during examination prohibited

"Sec. 4. An employer or employment agency shall not take any action against an employee or applicant for employment based upon an alleged or actual opinion that the employee or applicant for employment did not tell the truth during a polygraph examination.

"37.207. Actions for injunctive relief or damages; damages

"Section 7. (1) A person alleging a violation of this act may bring an action for injunctive relief or damages, or both.

"(2) For purposes of this act, damages include damages for injury or loss caused by each violation of this act and reasonable attorney's fees.

"(3) If an employee is discharged in violation of this act, damages for which the employer is liable under this section shall include double wages lost.

"37.208. Violation; punishment

"Section 8. A person who violates this act is guilty of a misdemeanor, punishable by a fine of not more than $1,000 or by imprisonment for not more than 90 days, or both."

Minnesota

Wages, Hours, Etc.; Polygraph tests (Code SS181.75. to 181.76).

No employer or his agent shall solicit or require a polygraph, voice stress analysis, or any test purporting to test the honesty of any employee or prospective employee. An employer or agent or any person knowingly selling, administering, or interpreting tests in violation of this law is guilty of a misdemeanor.

If an employee requests a polygraph test any employer or agent administering the test shall inform him that the test is voluntary.

In addition to the remedies otherwise provided by law, any person injured by a violation of this law may sue for damages, together with costs and disbursements, including costs of investigation and reasonable attorney's fee and achieve other equitable relief as determined by the court.

No person shall disclose that another person has taken any deception-detecting test, or the results of that test, except to the individual tested and to persons authorized by the employee to receive the results. A person who violates this law is guilty of a misdemeanor.

Montana

Labor: The Employment Relationship; Lie Detector tests (Code Section 39-2-304).

It shall be a misdemeanor to require any person take a polygraph test or any form or mechanical lie detector test as a condition of employment or continuation of employment.

New Jersey

Employer Requiring Lie Detector Test (Code SS2C: 40A-1.).

Any employer who influences, requests or requires an employee or prospective employee to take a lie detector test as a condition of employment or continued employment commits a disorderly persons offense. A copy of the report containing the results of a lie detector test shall be in writing and be provided, upon request, to the individual who has taken the test. Information obtained from the test shall not be released to any other employer or person. The employee or prospective employee shall be informed of this right to present to the employer the results of an independently administered second lie detector examination prior to any personnel decision being made in his behalf by the employer.

New York

Labor Law: Psychological Stress Evaluators and Employment (Code Sections 733. to 739.). (Note: New York restricts the use of Psychological Stress Evaluators, but not Polygraphs).

"Psychological stress evaluator" means any mechanical device which purports to determine the truth of statements made by an employee or prospective employee on the basis of fluctuations or voice stress.

It shall be unlawful for any employer to require, request, suggest or knowingly permit any of his employees or prospective employees to submit to a psychological stress evaluator examination and no employer shall administer or utilize the results of such test within or without the State of New York for any reason whatsoever. Violators of this provision shall be guilty of a class B misdemeanor upon the first conviction and upon any subsequent conviction a class A misdemeanor.

No employee shall be discharged, disciplined, or discriminated against for filing a complaint or testifying in any proceeding involving violations of this law. Any employee discriminated against in violation of this law shall be compensated by his employer for double the amount of any loss of wages and benefits and shall be restored to his previous position of employment.

It shall be unlawful to administer a psychological stress evaluator examination within the state to anyone seeking employment or continued employment outside the state of New York. Violators of this provision shall be guilty of a class B misdemeanor upon the first conviction and upon any subsequent convictions shall be guilty of a class "A misdemeanor.

Any employee or prospective employee damaged as the result of a violation of any of the provisions of this law shall be entitled to file an action for damages in the Supreme Court of this state.

Oregon

Oregon Laws 1963, c. 249.

"Section 1. No person, or agent or representative of such person, shall require as a condition for employment or continuation of employment, any person or employee to take a polygraph test or any form of a so-called lie detector test.

"Section 2. Violation of section 1 of this Act is punishable, upon conviction, by a fine of not more than $500 or by imprisonment in the county jail for not more than one year, or by both."

Pennsylvania

Lie Detector Tests (Code Section 7321.).

"A person is guilty of a misdemeanor if he requires as a condition for or continuation of employment that an employee or other individual shall take a polygraph test or any form of a mechanical or electrical lie detector test."

Rhode Island

Labor and Labor Relations; Lie Detector Tests As Conditions of Employment (Code Sections 28-6.1-1. to 28-6.1-2).

"No employer shall require any employee or prospective employee to take any lie detector tests as a condition of employment or continued employment.

"Violators shall be punished by a fine of not more than two hundred dollars."

Vermont

Polygraph Protection Act (section 1 21 V.S.A. chapter 5, subchapter 5a)

"494a Except as provided in section 494b, an employer or an employment agency shall not as a condition of employment, promotion, or change in status of employment, or as an express or implied condition of a benefit or privilege of employment, do any of the following:

"(1) request or require that an employee or applicant for employment take or submit to a polygraph examination; or

"(2) administer, cause to be administered, threaten to administer, or attempt to administer a polygraph examination to an employee or applicant for employment.

"494b The following employers may require that an applicant for employment take or submit to a polygraph examination:

"(1) the department of public safety, municipal police departments, and county sheriffs;

"(2) employers whose primary business is wholesale or retail sale of precious metals or gems and jewelry;

"(3) employers whose business includes the manufacture or wholesale or retail sale of regulated drugs, provided, however, that only employees who come in contact with such regulated drugs may be required to take a polygraph exam;

"(4) any employer authorized or required under federal law or regulations to administer polygraph examinations."

Washington

Labor Regulations; Requiring Lie Detector Tests (Code Sections 49.44.120 to 49.44.130.).

"It shall be unlawful to require any employee or prospective employee to take any lie detector or similar tests as a condition of employment or continued employment.

"Violators of this law shall be guilty of a gross misdemeanor."

West Virginia

Labor (Code Sections 21-5-5a to 21-5-5d.)

"Polygraph" means an instrument which records permanently and simultaneously a subjects cardiovascular and respiratory patterns and galvanic skin response as mininum standards. Other pertinent physiological patterns may also be recorded.

"No employer may require or request that any employee or prospective employee submit to a polygraph, lie detector or other such similar test that uses mechnical measures of physiological reactions to evaluate truthfulness. No employer may knowingly allow the results of any such examination administered outside this state to be used to determine whether to hire a prospective employee or to continue the employment of an employee in this state.

"An employee or prospective employee has a right to sue an employer or prospective employer for a violation of the above provision. If successful, the employee or prospective employee shall recover threefold the damages sustained by him, together with reasonable attorneys' fees and reasonable costs of the action.

"To administer a polygraph, lie detector or other such similar test to an employee or prospective employee a person must hold a current valid license, and to qualify for such a license a person must:

"(1) be at least eighteen years old; 2) be a citizen of the U.S.; 3) not have been convicted of a misdemeanor involving moral turpitude or a felony; 4) not have been discharged with other than honorable conditions from the armed services of the U.S. or any other nation; 5) have passed an examination; 6) have satisfactorily completed not less than six months of internship training.

Violators of this law shall be guilty of a misdemeanor and fined not more than five hundred dollars."

Wisconsin

Employment Relations; Use of honesty testing devices in employment situations (Code Section 111.37).

"(1)(a) Except as provided in par. (b), no employer or agent of an employer may directly or indirectly solicit, require or administer a polygraph, voice stress analysis, psychological stress evaluator or any other similar test purporting to test the honesty of an employee or prospective employee. No person may sell to or interpret for an employer or agent of an employer a test that he or she knows has been solicited or required by an employer or agent of an employer to test the honesty of an employee or prospective employee. If an employee requests a test purposting to test the employee's honesty, an employer or agent administering the test shall inform the employee that taking the test is voluntary.

"(b) This subsection does not apply to the use of an instrument or device for the purpose of verifying truthfulness or detecting deception, or assisting in the reporting of a diagnostic opinion as to either of these, which, at a minimum, is capable of recording visually, permanently and simultaneously indications of a person's cardiovascular pattern and changes therein and a person's respiratory pattern and changes therein.

"(2) Any agreement by an employer or agent of the employer and an employee or prospective employee offering employment or any pay or job benefit to an employee or prospective employee in return for taking a test permitted under sub. (1)(b) is void.

"(3)(a) If an employer or agent of an employer gives an employee or prospective employee a permitted test, the employer or agent shall follow the procedure under this subsection.

"(b) The employer or agent shall inform the test subject, in writing and orally, of all rights which the subject has under this section. . . . The employer or agent shall not proceed further with the test until the subject has provided written consent to take the test. The employer or agent shall conduct an interview prior to the test in which he or she discusses any questions to be asked of the subject.

"(c) If a person is given a permitted test under par. (a), each question shall be directly related to the person's performance or conduct in past or present employment, shall be designed to establish a known false response for comparison purposes or shall be used to verify the truthfulness of answers on a written employment applications. The employer or agent shall not ask any questions during the test regarding the subject's sexual practices, religious affiliation or beliefs, marital relationship, political affiliation or beliefs or labor union activities.

"(d) The employer or agent shall inform the subject of the results of the test and offer the subject the opportunity to explain any questionable responses or to retake the examination or both. If the subsequent, responses or the reexamination clarify any questionable response, the results of the initial test question shall not be reported further.

"(4) No employer may take any disciplinary action against or make a decision on hiring or firing an employee or prospective employee based on the results of a permitted test, unless the employer has relevant evidence or information, obtained independently from the permitted test, which tends to support the test results, or based on the refusal of the employee to take the test.

"(5) Every act by a labor organization, employer, employment agency, licensing agency or other person performed in violation of this section is an act of "unfair honesty testing" and is prohibited."

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Mr. MARTINEZ. I have only one question which I would like to ask each of the panel to respond to, and it is based on my own personal experiences.

You know at one time I was a great believer in the lie detector test because it was reported as being the godsend to being able to detect when people were lying, and particularly in the use for a high security place employment. But I had some personal experiences that revealed to me that it wasn't accurate. Let me just briefly tell you about one.

There were three particular young men who applied for a police department position in a city in which I was active. And because of a peculiar situation of campaigning, I happened to be at a home of one of those young men, who was still desirous of being on that police department. I asked him what his employment was. He was on the police department in another city. And he said he had passed the lie detector test there but failed at our city.

Subsequently I started to look into it and I found out there were quite a few but three in particular that were now working on another department. Earlier, you talked about race discrimination. I don't know that it was. Maybe it was more the particular attitude of the particular individual giving the lie detector test and his trying to determine who would best be suited to serve on that police department. Anyway, that is what it finally evolved to.

But these people were then given a lie detector test by someone that our chief had a great deal of confidence in, someone who ran a private detective service. The gentlemen checked out. That meant that these three individuals who were now working in another department had passed two tests and failed one. This lead me to believe in the inaccuracy of the device.

Then I subsequently found out that there was an individual on that department that could beat the lie detector every time and could show people how to beat it. You know, it began to create great doubt in my mind as to the validity of lie detector tests. Through that period of time I have come to know that the outcome of a lie detector test is influenced greatly by the operator himself. Their biases can creep into the outcome.

I would ask each of you to respond to this particular situation. What seems to be the big controversy is whether it works or doesn't work, and we know that it does work in some instances, but does it work to the degree that we want to place total reliability on it? How would you each respond to that, starting with you who have been a victim, Mr. Stanley? The question is do we want to place that much reliability on something that we know has been proven not to work in every case, even though it might work in some?

Mr. Stanley. I don't believe that we should put that much validity in that type of test. I think that through a good background investigation—I feel as though the cost of these tests, let's say roughly $200 to $300 per test, that if they had someone that was actually checked out on a job application, I think that that is the more effective way to qualify someone for employment instead of taking them in and giving them a polygraph test.

I don't agree that it would be—in my case it didn't show the truth. It showed that I was deceptive, and I wasn't deceptive. I wasn't trying to be deceptive.

Mr. Martinez. Were you under stress at the time you took the test? Were you apprehensive?

Mr. Stanley. Yes, I was.

Mr. Martinez. Norma.

Ms. Rollins. There are great questions about reliability, and I think most of the studies we have seen—and you will have experts here I believe later on today who actually conducted these studies—indicate that the lie detector is not accurate. But I think it goes further than that.

I think most of the time when someone fails a lie detector they haven't failed it because they told a lie and were caught. They failed it because they told the truth in order to appear honest and pass the test. So they get into these classic kind of catch-22 situations where asked a question, which may even be an illegal question like—were you ever arrested?—which in New York State is clearly an illegal question. People say yes because they don't want to lie, and then they don't get the job for that reason. And so it goes even beyond the reliability as to whether a machine can catch you lying. It coerces truths out of you which may be either legally or ethically not within the employer's jurisdiction to ask.

One other point, though, as you were talking about, what I thought you were saying, the potential use of the machine in a discriminatory manner. So we don't even know if the lie detector really found a lie or not, but somehow all the blacks or all the minorities who apply for a position are disqualified as having failed the test, and there is no way to detect whether that really was a discriminatory use of the test. We have seen that happen for older workers. We have seen that happen in a particular department store chain in New York where routinely people coming near pension time have been tested in large numbers and, lo and behold, people who worked there for 30 years and are 3 months from collecting pension all are found deceitful on a lie detector test which can't, of course, be objectively evaluated by anyone else, and they lose their job and their pension and their security. And that is a real problem.

Mr. Martinez. Mr. Lutty.

Mr. Lutty. Mr. Congressman, you are right. It has been shown that they are inaccurate but it goes much deeper than that, and Norma pointed out in many ways. It happens in many cases the people—and the evil of it is that once you fail, or they say you fail—you don't know whether you failed or not. Only the operator knows that you failed, or says you failed. But once they have that mark against you, you carry it with you. So there is not the only evil of not being accurate, which we know and it has been proven it is not accurate; it is what it does to the individuals.

Now we have been able in some of our contracts to write clauses and say you can't administer a lie detector test, but not in all of them. But we can't help a person who is applying for a job. That person is not protected, and could be hurt for years. And there is great discrimination because of the type of questions they ask that can get into your mind and give them answers that they are looking for, not on your ability to work, but what you think and what you don't think.

And I think there are several reasons why, not only that they are inaccurate. That is one primary reason, but there is other, more legitimate even, reasons why they should not be administered and why Congress should pass such a law to protect all the workers and not rely on State's rights. This is for all the people. All the people applying for jobs. And that is why it is important that these laws be passed as quickly as possible.

Thank you.

Mr. Martinez. Mr. Harbrant.

Mr. Harbrant. Thank you, Mr. Chairman. I would cite, perhaps, about three things quickly. First, even the FBI does not believe in large-scale screening or as a substitute for logical investigation by conventional means. Second, there is a study underway now which appears to indicate that certain minorities might be more susceptible to failing lie detector tests. Third, there is a gentleman by the name of Hillenmeyer of Southern Hospitality Group, which operates about 84 Wendys, who has indicated on NBC News that when they stopped using polygraphs morale went up and theft went down. And I think that is fairly eloquent testimony to the dangers that lie in giving tests that are totally, or that are much less than accurate.

I don't think that the Government should be in the position of legitimizing or giving credibility to inaccuracy, and I think that is why we need this bill.

Mr. Martinez. Thank you.

Mr. Williams.

Mr. Pat Williams. Thank you, Mr. Chairman.

I have four questions and about 5 minutes, so I would appreciate it, if I keep the question brief, you keep the answer brief if you will.

Mr. Lutty, I know that your union is as concerned as any group about theft of goods and theft of food, and you have taken steps to try to assist in preventing that. What means would employers have to protect themselves and their business from theft if their use of lie detectors was taken from them?

Mr. Lutty. Well, the normal security reasons, Mr. Congressman, would be adequate and there is a lot of ways in a retail store that can be set up as safety measures that protect the employer from theft, with the cash register, with the accounting of it, with the responsibility of it; and now with a computer in the warehousing and receiving of product, there are great controls in a market now. And through the normal procedures of security they have been, over the years, to be able to detect dishonesty. And where they have found dishonesty we have agreed with the employer that we did not want a dishonest member or dishonest employee working there because it affected everybody.

But we have known over the years that there are ways to detect dishonesty through normal security, and not through entrapment and the lie detector test.

Mr. PAT WILLIAMS. Mr. Harbrant, organized labor offers services to protect its members from false charges of theft or criminality. What do nonunionized employees do? Where do they turn for assistance?

Mr. HARBRANT. Well, facing these lie detectors or unreasonable blanket charges of theft, I think basically the answer is, Congressman, that there is no way to turn. There are certainly agencies, folks such as the ACLU, that one could turn to, but this does not answer the massive amounts of necessity that exist in the workplace. And I might add that even in the union context it is extremely difficult if there is no contract language that provides for banning of these tests. There is nothing that prohibits an employer from screening people by lie detector tests in the employment process.

So I think that what we are talking about is the need for across-the-board protection of workers whether they are union or nonunion.

Mr. PAT WILLIAMS. Mr. Stanley, you mentioned in your testimony that the lie detector examiner's attitude had changed when you met him for the second test. Quickly elaborate on that change in the examiner's attitude toward you?

Mr. STANLEY. The first time that I went to take the polygraph examination was when I first went after I had submitted my application for employment, and they told me that I had satisfactorily passed that and now I had to pass a polygraph to get the final OK for the job, which I did.

And when I went there, he greeted me very friendly. You know, told me about the polygraph and not to worry, and went through all the questions with me.

The second time that I was there he didn't even say hello. He just sort of glared——

Mr. PAT WILLIAMS. He didn't tell you not to worry the second time?

Mr. STANLEY. No. No, he didn't. He was very subdued and, you know, didn't elaborate on anything. Just told me: Come in here. Sit down. Roll your sleeve up. And that was about it and we got right into it.

Mr. PAT WILLIAMS. Ms. Rollins, in your experience, do the licensing statutes that have it adequately, or more adequately protect the rights of those taking the tests?

Ms. ROLLINS. As hard as we have worked in States to try to pass bans, we have worked equally as hard to oppose licensing statutes. It is a very dangerous thing because it gives a Government seal of approval. The polygrapher hangs it on the wall. It enhances the aura of science of the test. It makes it appear more accurate. Employers are more likely to rely on it because, if the Government has licensed this person, people think it must be OK.

So I think that they are very dangerous and I would rather see no statute than a licensing statute.

Mr. PAT WILLIAMS. Mr. Chairman, I would like to, if there is no objection, submit some additional letters along with the one that I read during my testimony for the record. These are letters, by the way, which the authors have said I could submit with their names for the record.

Mr. MARTINEZ. If there is no objections, so ordered.

Mr. PAT WILLIAMS. Thank you, Mr. Chairman.

[The letters follow:]

[illegible] 7-15-85

Dear Mr. William

I am Writing you in regard to the Problem I had With a Polygraph test.

I Was told that I Would have to take one and I told my Employer I Would. So I Was taking to a Room on their Property in order to have a Polygraph test.

When I got thier a Man told me to read this Paper and Sign it. I read the Paper and told him that I Would not Sign a Release form for him or my Employer. But I Would take the test Without it. He Become upset and told me to get out So I Went Back to Work.

Forty Five min. latter the Foreman asked Why I did not take the test I told Him that as a American Citizen by Signing the Release Paper I Would be giving Up all my Rights to the Employer and If he Wanted me to take the test I Would But I Would not Sign a Release.

After Completion of Work the Company Gave me a Release Form to have an attorny look at and advise me of my Rights. He told me not to Sign it.

The next Day I Went to Work at 5 AM and Worked untill 8 AM at that time the Boss and Foreman took me into a Room and talked to me For 3 more Hours trying to get me to Sign Release Form.

After the time Spent I Still Would Not Sign the release Form Which Was Sent to Mr. Dan O Grady With a letter.

All polygraph testing Was done April 21, 22 & 23 of 1985 at Happy Service in Springville Utah at their Store.

I am now receiving Unemployment From the State of Utah. I am also Having a Hard time Finding Work in my trade as a Baker. I have Worked For Safeway Stores INC for 10 years Riviera Hotel in Las Vegas Nevada 5 years Hilton Hotel ShowBoat Hotel and Stardust Hotel in Las Vegas Nevada.

I live in a Small town twenty Sif miles from Provo Utah and all Small towns Know Each and Everyone therefore Finding a Job in my line is Unsure. I feel that I Will half to leave and relocate to another area in order to fine Work.

I feel that a polygraph test is total Uncalledfor as I Was Not Charg With anything. I am Forty Five year old and have Worked for 25 years in this Trade and Feel that after Working at this Establishment it has taking a take on my rights as a Amarcian Citizen Innocint Untill Proven Guilty.

The Company I Worked for app 6 Months is owned by Mr Deon Dave With offices in Springvill Utah Who operates 11 Stores in this Area of Utah and the Give Polygraph test to all Employees in their Markets at a cost of $75 per Employees

If any one Eats a Donut or Peace of Cake the Employees Pay For it. In order to do Bakery Work it is nessesitary to tast the items to be Sold.

I do hope you will take this into Concideration about Polygraph test Because the other Employee are afraid to Stand Up to the Employer and Speak their rights Because of lack of Jobs.

Thank You

[illegible] J. Bale
P O BOX 88
SANTAQUIN UTAH
84655

(AVER WAD) 801-
(Pho.) 754 3904

PS I Was Fired April 22 1985 the Copy of release form Was mailed to Dan O Grady
815 16Th ST NW SUITE 408 WASHINGTON D.C.

July 16th 85

To
The Honorable Pat Williams

I am writing in response to my strong disbelief in the practice of Polygraph tests, At one time in my employment with a co. of Walnut Prop. better known as Pussycat Theaters I was told I must submit to this test. I stated up front that "No Way" would I take the test, I was hired any way, but was told I would have to submit at later date when a date is set up to test all employee's at the theater. The date set up I was ~~Ill~~ Ill at home with walking pneumonia & was told I must come in to work, I had no transportation & walked to work 8 or 9 blocks. When I arrived I was told because I was ill & on medication the test might not "take". In the end I did not take the test I quit my Job, I was told towards the end of my Job I had been seen stealing & they (the co.) ~~hap~~ had pictures of me "in the act". I worked with all the money incoming as well as out. Before the polygraph a voice ~~Stres~~ Stress test was in effect. In other words this company has always employed some type of digging into your private life. The co. lives & breathes polygraph. You are asked to sign a form stating you will take a polygraph. If you don't you are very much pressured into shift changes to encourge you into resigning your job. In the questions asked for the test they are very very personal. Have you ever been arrested, your home life, sex life, drug related questions, I think this test should be banned, its degrading & has nothing to do with job performance what so ever. I've seen many workers confidence destroyed by this test. Not to mention mine. Please ban the use of this demeaning practice.

Thank you for your time

Gabrienza Matthews

611 2nd St.

Taft, CA 93268

Dear Mr Williams,

One of the biggest nightmares of my life was going through the ordeal with the lie detector test

I was an employe of Fashion Bar (a retail store). I was a cashier. The store said that money was dissapearing from the register. They decided to send all the cashiers for lie detector tests. Knowing that I was innocent I had no problems in consenting.

After arriving and getting strapped up a woman asked me questions such as "Have you ever stolen money in your life?" "From Fashion Bar ect."

When she finished she said "Well, Pat, our test clearly indicates that you stole the money. Now we just want to know why you did it." I almost died.

What followed was a 45 minute badgering session with me being totally harassed, I told them that I refused to admit to something that I didn't do. They said that they would report to Fashion Bar that I was guilty and uncooperative (a lie since I was never anything but polite and concerned about how I could flunk such a test.)

When I reported to work the next day I was met by security. They said they wanted me to take the test again. Since I wanted to clear my name, I agreed.

The next time a man gave it to me. Once again he said I was guilty. I told him he was wrong and should try to help me figure out why his machine was wrong. He informed me that "his machine was never wrong. - I was indeed guilty."

After another half-hour badgering session he said that I was wasting his time since I wouldn't confess and left the room just leaving me behind. He made comments such as "I don't know how you can sleep at night knowing what you did." He also said he would report that I was guilty and uncooperative.

When I returned to Fashion Bar security said that I had fullfilled my obligation as an employee since I agreed to take the test and there was nothing that they could do legally.

I had by this time however been moved from being a cashier out to the sales floor where I didn't deal with money.

I didnt really have to but I quit. I didn't need all the aggravation and frustration for the 3.65 an hour that I was earning.

I personally feel that lie detectors in the work force should be illegal. I for one know first hand that they are not always right. I went through a lot of needless grief.

Sincerely,

Pat Larson
5131 S. Bahama St.
Aurora Colo. 8001[illegible]

The test was administered at

[illegible]
[illegible] 14th ave
Denver Colo.

BEDFORD, OH, *July 17, 1985.*

Hon. PAT WILLIAMS,
House of Representatives,
Washington, DC.

DEAR MR. WILLIAMS: I had been working at Jean Nicole at Randall Park Mall in Cleveland. I was there about a year. It all started with money missing out of the safe, to which the only people that knew the combination to the safe were the Managers. I was a Cashier at the time. On two other occasions there was money missing out the cash register draw. On one of those occasions I was not working.

That was their excuse for all of the employee's to take the lie detector test. Another person and I went on the 14th of March to the Detective Agency of Damar Security Inc. The girl that I had gone with took her test first. She ended up taking 4 test. When it was my turn I went into a small room which had a two-way mirror in it. The gentleman asked me to sit down facing a wall. He went through the questions on the test with me and asked me if there was anything I would like to tell before we started. He told me that whatever I said would be kept in complete confidence between him and me. So one of the questions was have you ever known anyone that has taked store merchandise I said yes I had he asked me who I said I can't tell you that and besides she no longer worked for the company, he named a person that I guess the girl before me had named but it wasn't the same person. Another question was had I ever misused my employee's discount and I said yes when I had first started I had bought a friend a belt on my store discount but only that once. Another question was had I ever stolen anything out of the store I said that a few days before the test that I thought about taking a pair of socks. And another question was did I know or think I new who took the money and I told him who I thought took it. He then proceeded to give me the test which I had to take twice.

When the two of us returned to work they would not let either of us run the cash register, which at that time told us that we had failed.

I had gone away for a few days but when a called they told me to be at work Monday at 10:00. When I arrived at work they took me in the back room and asked me to repeat what I had told the gentleman at the agency so I did. They informed me that since I had broken store policy that I had to be dismissed. They said that I had stolen from the store so the man must of misunderstood me or they just wanted to believe what they wanted to. I was so upset that I signed termination papers without reading what they put down as an explanation.

I later found out that two of my other friends quit while the girl I had gone with had gotten terminated also. These girls swear to me that they didn't take any money from the store. Plus they found out that the man that gave the test that the store just wanted to get rid of us.

I firmly believe that they blamed it on us just to pin it on someone.

I've been very unsuccessful in trying to find another job.

I was lucky enough to be able to collect unemployment.

Thank you for your concern and I hope to hear that something is done about the unfair use of lie detector test.

Thank you again.

Sincerely yours,

DARLA C. GUY.

JULY 22, 1985.

Hon. PAT WILLIAMS,
House of Representatives
Washington, DC.

DEAR HONORABLE PAT WILLIAMS: I was employed at McDonald's Restaurant, in Antioch, Illinois, from August 1983, to October or November 1983, I am not sure of final dates.

I was fired because there was money missing, which I did not take. They had a poor system of making change. My brother was still employed there, and after they fired me he said there was money missing and they fired others.

One day this manager Wally, called me asking me to take a lie detector test, which I really did not want to, but he assured me I would get my job back. So one Saturday in November I went and took it at their store. I never did get the results or my job back. Different managers had taken it too.

I hope you will investigate them, as I feel they were unfair to me and other employees.

Sincerely yours,

MARIANNE PUHR.

ST. CLAIRSVILLE, OH, *July 23, 1985.*

Hon. PAT WILLIAMS,
House of Representatives,
Washington, DC.

DEAR SIR: I am writing to you in regards to the use of the polygraph test for employment. I would like this letter to be inserted in the hearing records, bill H.R. 1524.

This letter is about my Son, Gary Guthrie, age 29 who was a victim of the polygraph test.

Gary is a member of the Operating Engineers Union of West VA. He has worked in construction for about seven years, mostly as a backhoe operator. He has been layed off work for nearly two years due to lack of jobs in our area. When he is off work he tries to take some classes at school so as to improve his chances of employment.

Last November, Gary moved to Salem, South Carolina where he thought he was going to get a job. He didn't get a job, but there was a job for his wife. He looked for work while his wife worked.

There is a Fast Fare Convenient type of store at Anderson, S.C. and the district office is at Seneca. This store had a help wanted sign in the window. Gary needed work, and he wanted to get some experience in store work, so he applied for the job. The job was an opening for night turn and the pay was $3.75 per hr.

One of the requirements this job, at this store was to take a polygraph test. The day before the test, Gary took a written test which lasted about two hours. If you passed this test, you would take the polygraph test.

The polygraph test was given twice. A waiver was signed, and the test time was an hour.

Listed are questions asked in the polygraph test. The order in which I have listed them, may not be the order in which they were asked.

1. Did you ever steal from your Employer in the last five years? Answer was no. The test showed questionable the first time given, and the second time also.

2. Did you ever sell any drugs in the last five years? Answer is no. This showed questionable the first time and the second time also. This question and the first one listed kept my Son from getting the job.

Before I go on with questions asked, I wanted to add these remarks. My Son does not steal. I know my Son. He is a boy to be proud of. He was raised the right way with love and proper guidance. As for selling drugs, my Son does not smoke or have anything to do with any drugs.

3. Question—How much money do you spend on beer a week? Answer-none. The person giving the test looked at him as if he was telling a lie. My Son doesn't drink.

4. Did you ever get fired from a job? Answer no, but got layed off. The test showed questionable the first time given, but it cleared up the second time it was given.

5. Have you had any injuries or illinesses that would keep you from getting a job? Answered no, except he told that he had cracked his knee-cap when he was in Highschool, but that it hadn't given him any problems. This showed questionable the first time, but cleared up the second time given.

You are asked if you are in debt. They think you will steal if you owe money. Was told that one person lied about this, as they thought they would not get a job if they said they owed money. This person passed the test and was working there. (If you have problems with paying bills, they think you will steal.)

Also in this store, My Son was told by an employee, that if they take inventory, and they are short, they may have to take a polygraph test and could get fired. This employee contacted the Labor Relations Board about this matter, and was told they couldn't do anything.

Gary didn't get this job because of a polygraph test. He called the Superviser and was told that he did not meet the Company Security Requirements. He was told that they would really like to give him a job. They liked him, said he was a clean-cut boy, and they knew that he didn't do these things.

In closing, I would like to say, I did not mind that my Son did not get this job, as I am sure there will be another job. I do mind the use of a test, such as the polygraph, when it means that decent people don't get jobs or someone gets fired because of it.

If you need any other information pertaining to the test, Gary would be glad to give it to you. He is attending the North American Institute of Aviation at Conway-Horry County Airport at Conway, South Carolina 29526.

Thank you so very much, for your time and consideration in regards to this matter.

Sincerely yours,

EILEEN G. DELANEY.

DIX HILLS, NY, *July 24, 1985.*

Hon. PAT WILLIAMS,
Rayburn Office Building,
Washington, DC.

DEAR CONGRESSMAN WILLIAMS: I would like to relate to you my experience with the polygraph machine in employment.

My first experience was in September 1976. I applied for a job at M. Fortunoff of Westbury. I was asked to take a polygraph test, and I was hired.

In November 1983 I was asked to take a polygraph test for the investigation of missing monies during the previous six months at the Fortunoff Backyard store, where I was employed in charge of the Cash room. All managers, security people and cleaning staff were also tested. On a Friday I was asked to drive over to the 3rd floor offices at the main store at 1300 Old Country Rd. Westbury. I met the polygrapher in a very tiny room, and he discussed what the test was about, and what questions he would ask. I was asked to sign something, which I read at the time, but do not recall the details, other than I was voluntarily taking this test. I was connected to the machine (across my chest, something on my fingers, and a blood pressure type pad on my arm). You are supposed to empty your mind, only answer "yes" or "no", not move at all, and do not look at the tester. He inflated the pad on my arm to considerable pressure, and asked questions he had gone over, like were you born in the United States; do you have any knowledge of the missing monies in the past 6 months; have you stolen anything of significant value from your employer in the last six months; do you think I will ask you any questions that I have not already gone over? He then released the pressure on my arm for a few minutes for a break, then inflated it again and repeated the series of questions. After he was finished, he disconnected me, and asked me to sign the papers that had come off the machine to verify that this was my test results. I asked him how I did, and he replied okay.

I do not recall exactly but I think there were 7 or 8 questions asked, and the entire experience lasted 45 to 60 minutes. He asked the same questions in series at least 2 possibly 3 times. My strongest memory of the test was the pain in my arm when the pressure was inflated, and it seemed to take an eternity to get through a series of questions.

Three days later, on a Monday, I was asked to return to the main store and be tested again because there was a malfunction with the machine. I really dreaded going through this extremely unpleasant test again, but I immediately returned to the main store, because I did not want any doubt of my honesty or reputation. When I arrived, I was told by one of the Vice-Presidents of the store who was in charge of the investigation, that I had not "done well" on the Friday testing. He questioned me at length, to try to determine if I knew something about the problems that I was concealing. They tested me again, and told me I was not doing well only on the questions concerning money. I was questioned extensively in attempt to get me to "confess". They told me the polygraph was 95% accurate, and the slight margin of error was for the guilty people who could pass the test, and they never heard of an innocent person being victimized by it.

I cannot fully describe the emotional turmoil I went through; I was completely humiliated, and felt robbed of my reputation of honesty and integrity. I was transferred to a different department (I refused to resign until my name was cleared, and I was not fired). In February 1975 I was reinstated to my former position, and told I was totally cleared of any suspicion and was told it was like "it never happened". At this time I told my boss that I would never take another polygraph test again because of that terrible experience I went through.

On September 14, 1984 I was asked to take a polygraph test in the investigation of 1 bag of missing money from two weeks previous. The entire cash room was tested, but I refused to be tested and explained why. One other girl also refused because of a bad previous experience. We were both immediately fired, and escorted out of the building!

I applied for unemployment and was turned down at first because Fortunoffs termed my refusal as misconduct. Due to the publicity about my experience, the labor board reversed the decision and I received benefits while I was looking for another job.

I feel there is an inference of doubt on my reputation because of polygraphing which makes it almost impossible to get another job in the same field. In February 1985 I went to work part-time in my husband's business. I would like to get back into a full-time job without facing any more polygraphs.

Thank you for your attention in this matter.

Sincerely,

PATRICIA DEFIORE.

LENEXA, KS, *July 19, 1985.*

Hon. PAT WILLIAMS,
House of Representatives
Washington, DC

DEAR CONGRESSMAN WILLIAMS: I was fired from a job after taking a polygraph test; but since I had only worked at that job a few weeks, I was able to omit that job totally from any resumes and employment applications. (Ironic: I "failed" a polygraph test during which I did not lie; now I must lie for the rest of my career about my employment history . . . and that, in most cases, can become grounds for termination of my employment. It's a conscious decision on my part to falsify this part of my employment history—I look at it as the lesser of two evils, the other "evil" not being considered at all for a job simply because of the fact that I've admitted to "failing" a polygraph.)

I'll apologize now, because this letter is being hastily written and it will be disjointed. I want you to have it in time for your hearing on July 30, so it will go out "as is." And I wish you success and appreciate your efforts.

After having failed a polygraph test, I did quite a bit of research on the subject. I was as naive as the rest of the world about the test—I took it, in fact, just to prove my innocence. Never occurred to me to think I'd fail it or that the test was fallible. After the test, I learned "tons" of revealing information. I'll summarize what to me are the most important facts to be considered insofar as use of a polygraph machine and polygraphers are concerned.

First, there is no machine or test which has been developed which is capable of detecting a lie. There in only a machine which measures: (1) rate of respiration, (2) heart rate, (3) galvanic skin response.

This machine is properly called a polygraph; it is sometimes referred to (erroneously) as a lie-detector. The people who use these machines are called polygraphers. Polygraphers would have us believe that a certain mechanically-measured "pattern" of the three responses above indicate that a lie is being told. (Of course, even the least reputable of polygraphers will not claim 100% accuracy; but they do make other claims of accuracy which cannot be substantiated.) To continue, the polygraph measures a response pattern, the polygrapher interprets the graph which the machine spits out . . . . and the verdict is passed, the verdict which, admittedly, is not 100% accurate. That's the bothersome part: knowing that 100% accuracy cannot be guaranteed, we persist in letting that X% of "false positives" and "false negatives" fall through the cracks and be labelled guilty or innocent.

As you also probably know, there is no standardized licensing procedure for polygraphers. Any old Joe can, in many states, invest in a machine, set himself up as a polygrapher, and make a fairly hefty salary. Some people (including many polygraphers) seem very concerned about this lack of licensing. My personal opinion, however, is that licensing a polygrapher would be about as sensible as licensing a quack doctor or a snake charmer. Until the tools the polygrapher worked with are able accurately to measure a lie, a license is not going to make the polygrapher able accurately to do so either. As I recall, the prototype for the modern polygraph machine was developed in a California garage for some other purpose altogether (my facts here may not be straight—I'm going on memory). Whatever, whoever decided the machine could be used as a lie-detector didn't have, and still doesn't have, the facts to back up such a silly assumption. And whoever says that giving men a license to detect lies will make them able to do so doesn't have facts to back up that assumption either.

My personal opinion is that the lie-detector will only be banned when enough people have been victimized that by sheer numbers they'll be heard.

As for the details of my own case, I'll try to be brief. There was apparently theft ($95 from a cash register to which six or seven person has access) in my workplace. For about two weeks, management called each of us into private sessions during which we were accused of having stolen the $95. We were told that if we would only confess, they'd "go easy," etc. We, the employees, of course, compared notes on these little browbeating sessions and became rather resentful of the treatment. Since no one confessed, management decided to proceed with the polygraph. I personally had become so irritated with the unprofessional treatment we were receiving prior to the test that I decided to resign my position as soon as the test was completed. When it was my turn to take the test, I went in—fairly smugly, I must admit, because I had my letter of resignation in my purse, ready to hand it in with a flourish. I could envision the scenario in which I'd say: "OK. I've passed the test. I did not steal. But you have my resignation, because I will not work for people who treat employees as you do." (I had several complaints about non-payment for overtime hours, nonreimbursement for use of personal autos on company business, etc. And I also knew management would be surprised at my resignation, because I'd become somewhat of a "model" employee during my short stay . . . .). Needless to say, I kept my little letter of resignation tucked away in my purse, because I failed the "lie-detector" test—not once, but three times straight!

The polygrapher, let me emphasize, did everything right by the book. He made sure to get in all the control questions, he made sure I was completely at ease. I was not at all nervous, nor did it even occur to me that the test would indicate that I was lying. I was flabbergasted when the polygrapher informed me that I was. I persuaded him to re-do the test twice; didn't help—I failed consistently.

The polygrapher told me, and repeated it in the presence of my employers when he informed them of the results, that he was certain that I was indeed not lying—despite what the test said. Didn't help, however (where there's smoke, there's fire), and I was fired shortly thereafter.

Wisely, my employer did not give as the reason for the termination my having failed the test. They stated only that they felt I "did not fit into the management team." (That was ironic, because just before the test, I'd been considered the "golden girl" of the team . . . .). I learned later, when I went to see an attorney on the subject of my firing, that I had no legal recourse whatsoever. That was in 1979 when employment-at-will was taken for granted.

At any rate, as I said before, I was one of the lucky ones; because I didn't have to list that job on my resume. I found another job shortly after that miserable experience (am still on that job). At the time of my application, I omitted that job but was so fearful of "news travelling" and my employer finding it out that I told my supervisor (and eventualy Personnel) the entire story. Fortunately for me, my supervisor had gotten to know me well enough that he "knew the truth when he heard it." I doubt seriously, however, that I'd ever have gotten this job had I been up-front during an interview about my history.

It's in the past now, I've learned a great deal, and I've become a better person because of my little experience with the so-called lie-detector. I wouldn't recommend it to anybody, however; there are better ways of attaining personal growth. . . .

If you'd like to have a little eye-opening fun, Congressman Williams, I'd suggest a fun little bit of investigation. You won't believe the preposterous claims you'll get; nor will you believe the wide range of answers you'll be given. This is how I spent part of my time between jobs while I was conducting my own private investigation of polygraphs and polygraphers. What you do is call all the polygraphers listed in the yellow pages. Tell them a little lie (they'll never detect it). Tell them that you own a small business, that you suspect that one of your five employees is a thief but that you can't catch them. (I made up a dress shop, and my cash register was short every now than then.) Tell them you've heard that you can give a lie-detector test to the employees, but that one of your friends said she'd heard it wasn't always accurate, and that you certainly wouldn't want to "catch" an innocent person. (Be very naive in your presentation, by the way—you don't want to use words like "polygraph," for example.) They will proceed to reassure you that they can indeed catch the thief. They will generally make all sorts of guarantees and reassurances and, if you ask them, will give you some totally unfactual statistics in support of their preposterous claims. They'll say things and make claims, in short, that they will *never* stand up and say in front of a Congressional hearing.

Thank you again for your efforts to ban the use of the polygraph as a lie-detector in the place of employment. I hope your efforts will carry over so that the polygraph is completely banned. If you have any questions or feel that I can be of further assitance, please feel free to contact me.

Sincerely,

——— ———.

BROOKLYN, NY, *July 22, 1985.*

Hon. PAT WILLIAMS,
House of Representatives,
Washington, DC.

DEAR SIR: I am writing because I have been told that your subcommittee will be conducting hearings on the use of polygraphs in employment. I am now in litigation because of my former employer's abuse of the polygraph. My experience, which may be of interest to the committee, are described in the enclosed complaint.

Because of my experience with the polygraph, I strongly believe that legislation is needed to ban its use in employment.

Very truly yours,

MAURICE COHEN.

SUPREME COURT OF THE STATE OF NEW YORK, COUNTY OF NEW YORK

MAURICE COHEN, PLAINTIFF, AGAINST ALEXANDER'S, INC., CLARENCE CRABB AND PETER FINNEGAN, DEFENDANTS

Amended complaint; plaintiff demands a jury trial; Index No. 29701/83

Plaintiff Maurice Cohen by way of Complaint against the defendants, says:

1. This is an action brought pursuant to the New York State Human Rights Law, N.Y. Exec. L. §§ 296.1(a) and 296.6, and New York Common Law for the discriminatory discharge of plaintiff on the basis of his non-job-related medical disabilities and for the defendants' negligence and recklessness in the administration and use of polygraph tests.

Parties

2. Alexander's, Inc. ("Alexander's") owns and operates a chain of department stores in the New York metropolitan area, including a store in Rego Park, Queens.

3. Clarence Crabb is a former employee of Alexander's who was employed to provide polygraph testing services, and who administered a polygraph examination to the plaintiff on September 7, 1982.

4. Peter Finnegan is a former employee of Alexander's who was employed to provide polygraph testing services, and who administered a second polygraph examination to the plaintiff on September 9, 1982.

5. Maurice Cohen is a resident of Brooklyn, New York, and was employed as Manager of the Toy Department at Alexander's Rego Park store from May 10, 1969 until his discharge in September 1982.

6. Mr. Cohen had a good employment history at Alexander's, and consistently received favorable evaluations and salary increases. He had never been accused of any theft or other wrongdoing during his thirteen years as an employee of Alexander's. In fact, Mr. Cohen received a commendation in May 1982 for preventing a cashier from taking money from a cash register.

Factual allegations

7. Mr. Cohen suffers from a series of physical disabilities, including fluctuating high blood pressure, a stutter, sinus and throat problems, and a nervous condition.

8. These disabilities, and the medication Mr. Cohen must take for them, affect his blood pressure, breathing and perspiration. His stutter makes his respiration pattern erratic.

9. In late August 1982, Mr. Negron, the Store Director for Alexander's Rego Park store, called two meetings of all managers to explain that the store would require all employees to take a polygraph examination.

10. On September 7, 1982, Mr. Cohen submitted to a polygraph test. He voluntarily agreed to be one of the first store managers to do so. The test was administered at the Rego Park store by Mr. Crabb.

11. Mr. Crabb explained the operation of the polygraph machine to Mr. Cohen, and asked him if he was taking any medication. Mr. Cohen told Mr. Crabb that he

was taking aspirin and high blood pressure pills. Mr. Cohen had also expressed his concern that his fluctuating high blood pressure would affect the results of the polygraph test. Mr. Crabb assured Mr. Cohen that it would not.

12. First, Mr. Crabb conducted a pre-test interview. Then he hooked Mr. Cohen up to the polygraph machine and asked him questions. Mr. Cohen answered all the questions truthfully.

13. On Thursday, September 9, 1982, Mr. Cohen was informed that he would be required to take a second polygraph examination. Mr. Cohen then presented himself to the second polygraph examiner, Peter Finnegan.

14. Mr. Finnegan assured Mr. Cohen that his high blood pressure would have no effect on the polygraph test results. Therefore, Mr. Cohen agreed to take a second test at that time.

15. After conducting a pre-test interview, Mr. Finnegan hooked Mr. Cohen up to the polygraph machine and asked him questions. Mr. Cohen answered all the questions truthfully.

16. Immediately after the second test, Peter Finnegan told Mr. Cohen that it looked as if he had been stealing merchandise from Alexander's.

17. Later that day, Mr. Cohen observed Mr. Myers of Alexander's Corporate Security meeting with Mr. Finnegan.

18. Still later that day, Mr. Cohen met with Ms. Maureen Ostacher of Personnel, and her assistant, Ms. Anita Dent. Ms. Ostacher informed Mr. Cohen that he was being terminated for failure to receive security clearance.

19. As a result of his termination, Mr. Cohen has suffered humiliation and severe emotional distress, and has been prevented from obtaining employment in the retail business.

First cause of action

20. The plaintiff restates and realleges each and every allegation in paragraphs 2 through 19.

21. Alexander's is a private employer subject to § 296.1(a) of New York State's Human Rights Law, which provides in relevant part:

"It shall be an unlawful discriminatory practice [f]or an employer . . . because of the . . . disability . . . of any individual, to refuse to hire or employ or to bar or to discharge from employment such individual or to discriminate against such individual in compensation or in terms, conditions or privilege of employment."

22. "Disability" is defined in N.Y. Exec. L. § 292(21) as "a physical, mental or medical impairment resulting from anatomical, physiological or neurological conditions which prevents the exercise of a normal bodily function or is demonstrable by medically accepted clinical or laboratory diagnostic techniques . . ." and "shall be limited to physical, mental or medical conditions which do not prevent the complainant from performing in a reasonable manner the activities involved in the job or occupation sought."

23. Mr. Cohen's fluctuating high blood pressure, stutter, sinus and throat problems, and nervous condition are all "disabilities" as that term is defined in the Human Rights Law.

24. At no time did any of Mr. Cohen's disabilities interfere with his ability to perform his job as Manager of the Toy Department at Alexander's Rego Park store.

25. Mr. Cohen's physical disabilities, particularly his nervous condition, fluctuating high blood pressure and stutter, which were known to Alexander's and its agents, the polygraph examiners, distorted the results of the polygraph test administered to him, rendering the results of those tests inconclusive or invalid.

26. Alexander's and its polygraph examiners knew or should have known of Mr. Cohen's disabilities and knew or should have known that Mr. Cohen's disabilities rendered the polygraph test results inconclusive or invalid.

27. As a result of his non-job-related physical disabilities, Mr. Cohen was determined to have "failed" two polygraph tests.

28. Alexander's discharged Mr. Cohen on the basis of this invalid determination that Mr. Cohen had "failed" polygraph tests.

29. Alexander's discharge of Mr. Cohen constitutes an unlawful discriminatory practice which violates § 296.1(a) of the New York Human Rights Law.

Second cause of action

30. The plaintiff restates and realleges each and every allegation in paragraphs 2 through 29.

31. Clarence Crabb and Peter Finnegan are persons subject to § 296.6 of New York State's Human Rights Law, which provides:

"It shall be an unlawful discriminatory practice for any person to aid, abet, incite, compel or coerce the doing of any of the acts forbidden under this article, or to attempt to do so."
N.Y. Exec. L. § 296.6.

32. Clarence Crabb and Peter Finnegan knew or should have known that their determination that Mr. Cohen had "failed" polygraph examinations would cause Alexander's to discharge Mr. Cohen.

33. By determining that Mr. Cohen had "failed" polygraph examinations although they knew or should have known that Mr. Cohen's disabilities rendered the polygraph test results inconclusive or invalid, Clarence Crabb and Peter Finnegan aided and abetted Alexander's unlawful discriminatory discharge of Mr. Cohen.

34. Clarence Crabb and Peter Finnegan's actions which aided and abetted Alexander's unlawful discriminatory discharge of Mr. Cohen constitute a violation of § 296.6 of the New York Human Rights Law.

Third cause of action

35. The plaintiff restates and realleges each and every allegation in paragraphs 2 through 19 and 25 and 28.

36. Clarence Crabb and Peter Finnegan breached the duty of reasonable care which they owed to Maurice Cohen by negligently or recklessly administering polygraph tests to Mr. Cohen and interpreting the results of Mr. Cohen's tests as "deceptive" when they knew or should have known that Mr. Cohen suffered from physical disabilities which rendered the results inconclusive or invalid.

37. Clarence Crabb and Peter Finnegan breached the duty of reasonable care which they owed to Maurice Cohen by negligently or recklessly reporting invalid test results to Alexander's when they knew or should have known that this information would cause Alexander's to terminate Mr. Cohen.

38. The negligence of recklessness of Clarence Crabb and Peter Finnegan in the administration and interpretation of polygraph tests was the direct and proximate cause of Mr. Cohen's discharge and of the humiliation, emotional distress and inability to practice his occupation which Mr. Cohen has suffered as a result of being discharged for having "failed" two polygraph examinations.

Wherefore plaintiff prays for judgment:

1. Adjudging and declaring that:
    (a) defendant Alexander's, Inc. wrongfully terminated the plaintiff, Maurice Cohen, from employment, in violation of § 296.1(a) of New York State's Human Rights Law, N.Y. Exec. L. § 296.1(a);
    (b) defendants Clarence Crabb and Peter Finnegan aided and abetted Alexander's discriminatory discharge of plaintiff in violation of § 296.6 of New York State's Human Rights Law, N.Y. Exec. L. § 296.6; and
    (c) defendants Clarence Crabb and Peter Finnegan negligently or recklessly injured plaintiff by inaccurately labelling him as "deceptive";
2. Directing the defendants Alexander's, Clarence Crabb and Peter Finnegan to issue written apologies to plaintiff for their wrongful conduct;
3. Directing the defendant Alexander's to (a) reinstate the plaintiff to the position of Manager of the Toy Department at Alexander's Rego Park store, with all rights, privileges or benefits that the plaintiff would have accrued or to which he would have become entitled had he not been terminated from employment, and awarding the plaintiff compensatory damages for lost wages and benefits in the amount of $885,000;
4. Awarding the plaintiff punitive damages in the amount of $500,000;
5. Awarding such other and further relief as the Court may deem just and proper.

Dated: New York, New York, October 31, 1984.

Respectfully submitted,

Margaret K. Brooks,
Paul N. Samuels,
(Legal Action Center of the City of New York, Inc.)

Prepared with the assistance of Jon Bauer.

Dennis H. Tracey,
Attorneys for Plaintiff Maurice Cohen.

Dear Pat Williams

It is very hard and upsetting for me to talk about. I have been suffering and still do suffer with my past horrifying experience with lie detector tests. I apologize for the messiness of this letter. As I said above it is still very upsetting to talk about to anyone.

I have a picture, to which I intend to [illegible], in my possession of my left (wrist) arm where the cord was put round my arm. The arm was swollen and also [illegible] from it for 4 days. I had pain in my left arm and could hardly use it for 2 days. I am left handed so it was real hard for me to do anything for 3 days after the test.

I entered the room at the Ramada Inn in [illegible] at 5.0 pm - I left the Inn at 6.35 pm. It, they therefore took 1½ hours for the tests (3 times), plus questioning. I don't remember the Room no.

[illegible] the [illegible] they, then are to go to the [illegible] as they [illegible] [illegible] after the tests.

I was [illegible] [illegible] [illegible] 1984 [illegible] back to work on [illegible] 10, 1984 [illegible] worked part of [illegible]

I was [illegible] [illegible] places they [illegible] I [illegible] that if I wanted to [illegible] to get along [illegible] with the [illegible]

I had [illegible] humiliated, [illegible] harassed by the manager, supervisor and some other people, including the King [illegible] [illegible] the tests to me.

I pray and hope that [illegible] doctors do [illegible] with their tormenting, painful [illegible] !!!

To this day, Daniel ([illegible]) X-manager of King [illegible] and will not look you straight in the eyes for anything.

Thank [illegible] for myself, my family, friends and fellow co-managers and employees I could not have done it without them.

My feelings when it all happened were,
Days 1-2-3 Shaken
" 4-5 Hurt
6-7-8 Mad & angry with everyone.

I could not and still can not believe it really happened to me. I did not talk to anyone for 5 days. I had a bad with drawal from the whole ordeal. I had been accused of a serious crime. Everyday went by, when the phone rang or the door bell rang, I would absolutely go into a [illegible]. I was so terrified after being threatened by these people, I could not sleep, when I closed my eyes I could see and hear bars from the prison or jail slamming before me. I didn't go anywhere for days, would not see or speak to anyone.

When I first was put back to work, under protest, I felt everyone was staring, whispering and following me everywhere. I was so embarrassed I did not talk to anyone for 3 days after going back to work because I was told that I was being watched.

I didn't want to see anyone [illegible]

trouble, so I didn't talk to anyone when I visited. I was still terrified.

I tried to talk to someone but when I tried, I didn't know to whom. I was still scared to discuss it with anyone, fearing they would use them against me somehow.

I felt like I was in a room, no window or doors and couldn't get out. I couldn't breath. I was so scared. I had these scary and terrified feelings for 4 months.

I had to finally, go and talk to my the dr. and preacher. I was smothering I couldn't stand it or take any more.

I can't go on it's too upsetting, please forgive me I apologize.

Sincerely,

Phyllis

Phyllis McCalf
4524 Glenhurst
Orange, Texas 77630

P.S.
Thanks for listening and caring.

Suspension June Friday 29 - July 10, 1984

Wednesday ~~July~~ June 27-84
Russell Yates - Mary Jane
In Manager's Office at Kroger's

Did you know about the cash shortage in the courtesy booth?
Yes, Sir.
How did you know about the cash shortage? Who did you ask?
I would ask the next day at work when the courtesy booth came out on balancing. I would ask Sue or Sally.
Did you know the total amount of shortage in the courtesy booth?
No
You didn't know the cash shortage was $13,000
No
Did you know some of the cash shortages appeared when you worked?
Yes
Can you name a specific amount that sticks in your mind? One of any amount? No, I can't
How long have you worked in the courtesy booth? [illegible] weeks

Friday June 29-84
Polygraph - Ramada Inn
5:00 p.m. - 6:30 p.m.

Do your first name Phyllis? yes
Do your last name McCall? yes
Do you live in Texas? yes
Do you believe in God? yes
Are you sitting in a chair? yes
Are you wearing a ring? no
Are you wearing a watch? yes
(3) Are you intentionally lying to me? no
Are you covering up for anyone? no
Did you take ~~the~~ money missing from the courtesy booth? no
Did you take any part of the money missing from the courtesy booth? no
Have you stolen any money from Kroger's? no
Do you know of anyone that took money from the courtesy booth? no
Did you or anyone ever joke about taking money from the courtesy booth? no
Did you eat anything today? yes
Did you take any medicine today? no

(I) was given the test 3 times

Were you asked to go into the courtesy booth? Yes

Who asked you? Pauline

Have you ever worked in the booth before, by relieving, cashing checks, or anything, for anyone. No I never entered the courtesy booth for anything, for anyone, for anytime, for any reason

Will you take a polygraph test when we set it up? Yes, I have nothing to hide or hold back.

When you take the polygraph test we will question you only on what took place pertaining to this certain case only, back up to 6 months ago only. I don't care what happened before that time

Mr Clements talked to the others, they agreed to take the polygraph test. He said that you were off when he talked to the others is why he hadn't mentioned it to you

I knew nothing about the amount of shortage in the booth until you called me up here today.

Two times first he kept wanting to know if I was intentionally lying to him. After the 2nd time, he released the pressure on my arm. Once again, insisted I was lying to him. He brought up an incident that happened 3 yrs. ago. He told me I was never cleared on these charges but they couldn't find proof on me. I was really nervous and upset then. Again he wanted me to take the test after upsetting me more. I felt I was being badgered.

What kind of nerve pills were you on? Valium & Librium. This was asked before the 3rd test.

Same question. After 3rd test he told me I was lying. Wanted to know why and told me my tests were deceptive. He told me to explain myself and tell me the truth.

I felt again as I was being badgered and was already found guilty. He told me twice I was never cleared of the incident in 81 with the register short again

While the shortages around 81 occurred I started making copies of all my work. I was questioned why by several people. I told them for my own benefit. After and during that my register never came up short like they were again.

Room 105. Russell Yates/Mary Jane
Did you know your tests were deceptive that you are lying to us about the missing money.
It told me they were, I don't know why, except being nervous and upset. I'm not lying to you. I swear to God I did not take any or part of that money. Why are you lying to me. I'm not. What if someone saw you take money from the courtesy booth? Did they tell you they saw me do it, when, who did, I don't believe you. You were also involved in the incident in 81. I know I didn't take that money either. I never stole any money from Krogers

Tuesday - July 10 1984 11:50 p.m.

Duke & I met with Mr. Clements. He informed me that Personnel called him and told him that he had to put me back to work because nothing was found on me as proof in the situation. Mr. Clements said that I would come back to work as a [illegible] on total accountability. I told him that I would be glad to come back to work on this account. I told him that when I left my register I would also always undo all accounts, take my [illegible] key with me, on break, my lunch whenever I left my register. He told me that this is what total accountability is all about. He said the investigation and my total accountability would be only 2 weeks. I said fine with me. He told me also that he was not involved and did not know anything more than he was told. He brought the [illegible] that happened up in 81. He asked me if that was a cash shortage also. I told him yes. He asked if I knew what he was talking about. I [illegible] told him yes I did. I was not called at home by Mr. Clements. He had Larry Baird call me to ask if I could meet with him at 1:30 p.m. this afternoon. The 2 weeks would be July 6 - July 21. [illegible] of two weeks [illegible] off of accountability and investigation would be over. As of July 23rd Monday, I'm still on accountability and investigation is still going on. Mr. Clements asked me on Tuesday if I could come to work today. He said he needed me to come to work today. I asked today? He said yes, at 2:30 p.m. to 11:00 p.m. tonight. I said I would. He said that [illegible] give me time to go home, clean up and pull myself together before going to work. [illegible] me also [illegible] all guilt [illegible] to me. I told him that [illegible] the [illegible] or me is the polygraph test. He said yes that is right. He [illegible] [illegible] at the [illegible] came up about when I worked on [illegible] days.

I have been told on many accounts on many days that the vault is still coming up short, by various fellow employees.

On Monday, July 30-84 at the store at 1:23 p.m. Duke & I went upstairs to the office and talked to Mr Clements. I told him that I ~~so~~ wanted to ask him a couple of questions.

I asked him if I was still on accountability. He said yes, until the investigation was over. I asked him how long that would be. He told me that he was going to Lafayette this afternoon, that he would talk to Russell Yates sometimes this week. He told me that he knew that Adam and I talked to him Monday about the accountability. He told me that I was the one who asked for it. I told him no I wasn't, that he brought it up that I would be on accountability, and that I agreed on it. We argued about 15 seconds on the matter. He said that he didn't ~~[illegible]~~ know why it bothered me about being on accountability.

He also said that if he was a chicken, even if he was ~~[illegible]~~ shifty,

that I would [illegible] to be on
accountability. I told him
thank you, that I appreciated
it. I did so & I then left
the office at 1:30 pm. then
left the store.

copy

1) Mailed grievance to Jim Atchison,

Saturday
12. 2 pm
Jun 30-84

Joan,

I, Phyllis M McCall, did voluntarily take the polygraph test.

I do also give you and the Union the authority to file this grievance, in my behalf, against the Supervisor, management, & Kroger company.

Phyllis M McCall

SS# 463-96-7261

Joan Atchley
908 16th Street
Orange, Texas 77630

Mailed on the above date.

- Contract Book
- Arbitrator
- Company Contest Unemployment Check on Friday
- Keys

Mr. Clements
Sally
Tommy
Sherry
Pauline
Mary Jane

Did not have to take the test

1-318-589-6164 - Rufus Graham

+

(1) Try for [illegible] arrangement
(2) Lost at arbitration
(3) Court
(4)

Sent Certified to Mr. Gary Huddleston - P-714-[illegible]
8/2/84 JA/[illegible]

Company Kroger
Article 6
Union use only

UFCW
LOCAL UNION NO. 455 AFL CIO
1445 North Loop West, Suite 710
Houston, Texas [illegible]
(713) [illegible]

AUG 1984
LOCAL 455

GRIEVANCE FORM

1. Date form filled out July 25 SS # 463-96-7264
2. Member's Name Phyllis McCall Phone No. 886 7279
Address 4524 Glenhurst Dr Orange Zip Code 77630
3. Company Kroger Store No. 929 Address Orange
4. Date of Grievance July 9 Store Steward
5. Details of Grievance On or about the week of July 9 P. McCall was placed on cash control due to a shortage on store books. Store management - supervisors - plus several employees had access to books. Only one person was placed on cash control
6. Settlement Requested That P. McCall be taken off of cash control and the discrimination and harassment of P. McCall stop.
7. Date Grievance was discussed with Manager. If it has not been discussed so state here [illegible] Kroger
8. Store Manager's Name Mr. Clements Supervisor's Name Mr. K ~~[illegible]~~ Cavallo
9. Member's date of hire 12 years Full time Yes Part time
10. Name of witnesses, if any
11. Signature of Aggrieved Employee
12. Business Representative J Atchley

Mailed certified copy to Mr. Gary Huddleston on 7-5-84
P 714 916 697

Company KROGER
Article 6
Union use only

UFCW
LOCAL UNION, NO. 455 AFL CIO
1445 North Loop West, Suite 710
Houston, Texas 77008
(713) 880-8411

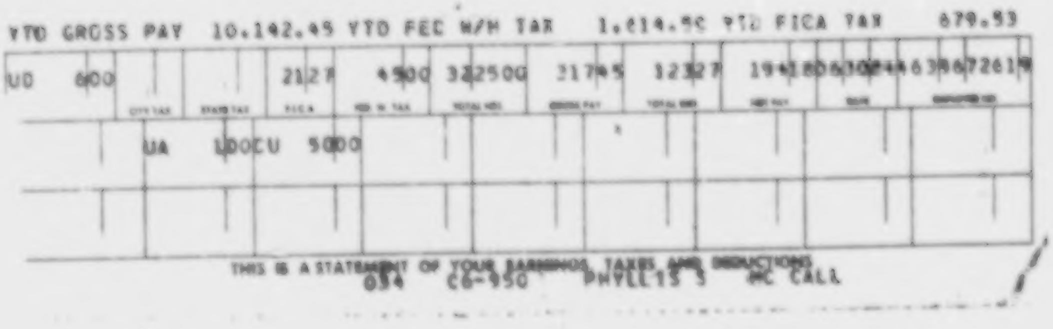
GRIEVANCE FORM

1. Date form filled out 7-5-84 SS # 463-96-7261
2. Member's Name PHYLLIS M'CALL Phone No. (409) 886-7379
Address 4524 GLEN HURST City ORANGE Zip Code 77630
3. Company KROGER Store No. 950 Address ORANGE
4. Date of Grievance 6-29-84 Store Steward DUKE
5. Details of Grievance

ON OR ABOUT 6-29-84 THE ABOVE NAMED EMPLOYEE WAS SUSPENDED AND/OR TERMINATED WITHOUT JUST CAUSE.

6. Settlement Requested Reinstated and made whole in all ways

7. Date Grievance was discussed with Manager. If it has not been discussed so state here
8. Store Manager's Name Mr. Clements Supervisor's Name KAISER
9. Member's date of hire Full time [✓] Part time
10. Name of witnesses, if any
11. Signature of Aggrieved Employee
12. Business Representative Joan Atella /lr



YTD GROSS PAY 10.142.45 YTD FED W/H TAX 1.014.9C YTD FICA TAX 679.53

UD	600			2127	4500	322500	21745	12327	19418006107	446386672619
		CITY TAX	STATE TAX	FICA	FED W/H TAX	TOTAL HRS	GROSS PAY	TOTAL DED	NET PAY	DATE
		UA	100CU	5000						

THIS IS A STATEMENT OF YOUR EARNINGS, TAXES AND DEDUCTIONS
034 C6-950 PHYLLIS J MC CALL

Form 3419-2

WORK SCHEDULE

FOR

STORE No. Checker 950 Department ____________ WEEK OF 7-14-84

EMPLOYEE		SUN.	MON.	TUES.	WED.	THUR.	FRI.	SAT.	TOTAL HOURS
Phyllis McCall				230 10	1230 8	1230 8	1230 8	1230 8	40

Mr. MARTINEZ. And finally, let me say particularly to the employers and the employer organizations that are here. You need protection because we are fast approaching the threshold of enormous numbers of lawsuits against both the lie detector company, the examinations and the companies that sponsor the lie detector tests. And the medical malpractice suits may look like a Saturday afternoon tea party compared to the suits that are going to come from wrongly identified employees. You need protection. You should support this bill, employers.

Mr. MARTINEZ. Thank you, Mr. Williams.

Let me apologize for not introducing Mr. Henry from Michigan when he came in. But he is up next, so he will introduce himself.

Mr. Henry.

Mr. HENRY. Thank you, Mr. Chairman. I was at a caucus, or a conference, and I am sorry I was late.

This brings back memories. We went through the same struggle in Michigan and, as you know, we have already prohibited the use of these devices in Michigan. I have to say that my father-in-law was a pharmacist, so he had the problem of employee theft on and off. He did not use these devices but, on the other hand, he certainly had all of the problems, and so I am particularly aware of what employers face.

One of the gentlemen mentioned that licensure statutes have not helped. Is there anything short of banning these devices that has had some measurable improvement in terms of getting better validity of the tests? Over and over again you will hear, particularly from the law enforcement community, that a properly administered test by a properly trained administrator is reliable. The problem is that there are too many people out there who are not properly trained, or that the test was given in only 15 or 20 minutes and you have to have enough time and the right ambience with the person being tested to get the kind of environment for reliability.

Can any of you name or give us any kind of alternative other than the prohibition for employment given the problems you have described?

Ms. ROLLINS. I think not. I think that the employment context is the particular use of polygraph. It is a freewheeling investigation. It is looking for all kinds of thoughts and beliefs and attitudes of the individual tested. It doesn't lend itself to the same kind of investigation that the police are talking about. And I don't know that there is necessarily any more reliability, really, in a police investigation use of polygraph than employment. But the studies do indicate that they have the least value in the employment context.

And there isn't any way you can limit the questions or you can in any way control the situation of the test that would make it more valuable. It is just not a valuable tool in the employment context.

Mr. MARTINEZ. On that question, would the gentleman yield? On your time?

The particular individual that I talked about was sent to, by the city, at great expense to the city, to the best available school run by a Federal Government agency. He still allowed his own biases toward certain kinds of individuals to creep into that test, and this disqualified many people that were very competent. So even though he was, let us say by standards of operation, completely trained and adequate and qualified, he still allowed his biases, to influence the outcome, and that was finally determined. So I don't know how should we permit the civil rights of people to lie vested in a box, a machine? I think that is the bigger question in trying to get this legislation passed.

Mr. HENRY. Well, thank you, Mr. Chairman. I just wanted to get this point clearly on the record—that there was, from the testimony received here, no viable alternative from their point of view other than the prohibition. And if any of them felt there was, I would like to have it on the record. That was all.

Mr. MARTINEZ. Thank you.

Mr. HARBRANT. Congressman, if I could. I think the answer to that question lies in first having it fairly well established that there are so many variables—body changes, if you will, blood pressure, colds, headaches, et cetera, et cetera—that come into play. The interpretation by the one issuing the polygraph test. But I think the bottom line to it is that there are alternatives in terms of an operation within a company that by good recordkeeping and by attractive discounts for company products, as an example, a healthy organizational climate, loss prevention systems without abusing either the workers or the customers, good management, honest senior management in dealings with workers and the customers, and I think in the employment process what we are talking about is careful interviewing techniques, clearly stated job requirements, as well as testing for specific jobs and skills. And I think that those can be some of the answers that could overcome the preponderance of evidence that I think displays rather vividly how inaccurate the test can be, and the harm that can be done to a lot of workers.

Again, the private use exceeds criminal justice investigators in terms of use, more than the Federal Government use. The fact that the FBI doesn't believe in it, in large screening. And I think the other thing that we are talking about is if a company suspects theft there is a very simple solution—you call in the police.

Mr. LUTTY. Mr. Congressman, I think it has been proven that without the lie detector an employer can really hire good people through a personal interview, one-on-one contact; and once a person is hired it is not difficult, if there is good company policies and practices and if they are followed, to track the honesty and dishonesty. Because I have worked in a retail store, in a retail supermarket, and I know that if there is good company practices and if those practices are followed from the manager on down to everybody, there is very likelihood of dishonesty; but if there is, it can be tracked, and relatively easy. We found people who stole. There is no question about it. But they were caught through tracking, through the following of policies of the company, and the union upheld the company. It was proven they stole, and they were discharged.

But the lie detector doesn't even prove that. At least with the normal procedures you have some proof that something can be done, not innocent people getting hurt. And that is what happens with a lie detector test.

Mr. MARTINEZ. The time of the gentleman has expired.

I wish to thank this panel very much. We are very encouraged by your testimony. We know it will go a long way in helping us resolve this problem. Thank you very much.

Mr. MARTINEZ. Our next panel will be Leonard Saxe, associate professor of psychology, Boston University, Center for Applied Social Science; David T. Lykken, professor, University of Minnesota Medical School, Psychiatric Research Division; J. Kirk Barefoot, former president, American Polygraph Association; Doug Gene Wiliams, ex-police sergeant/polygrapher, Oklahoma City Police Department.

As the panel is seating itself, I would like to announce again that we will hold each panel member to five minutes. Your written statement will be entered in the record in its entirety. Watch the bouncing red light; when you see it go on, please summarize.

With that, we would like to start with Leonard Saxe.

STATEMENTS OF LEONARD SAXE, ASSOCIATE PROFESSOR OF PSYCHOLOGY, BOSTON UNIVERSITY, CENTER FOR APPLIED SOCIAL SCIENCE; DAVID T. LYKKEN, PROFESSOR OF PSYCHIATRY AND PSYCHOLOGY, UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, PSYCHIATRIC RESEARCH DIVISION; J. KIRK BAREFOOT, FORMER PRESIDENT, AMERICAN POLYGRAPH ASSOCIATION; DOUGLAS GENE WILLIAMS, EX-POLICE SERGEANT/POLYGRAPHER, OKLAHOMA CITY POLICE DEPARTMENT

Mr. SAXE. Thank you, Mr. Chairman. I am very pleased to be here this morning.

I would like to summarize my statement by recalling some comments of Senator Edmund Muskie, when he was in the Senate. He was apparently chairing some hearings where Philip Handler of the National Academy of Science had appeared. Senator Muskie had trouble pinning down Dr. Handler about the consequences of air pollution. He kept saying: Well, on the one hand, if we've got this many particles in the air, this may happen; and on the other hand, if we have this many particles, we allow these many particles in the air, this may happen. Apparently in frustration, Senator Muskie finally slammed down his gavel and he asked for a one-armed scientist to please appear before his committee.

Well, I come today, at least metaphorically, as a one-armed scientist. It seems to me as a scientist it is unequivocal that polygraph testing is not valid, and that is particularly so with the type of polygraph testing used in the employment context. I was the principal author of the Office of Technology Assessment report, and the comments of a later witness notwithstanding, that report was an objective, comprehensive examination of polygraph testing and incorporated the views of both proponents and opponents of testing. I would like to leave it to the OTA report, as well as other articles that I have written, to describe the scientific evidence and the analysis. Certainly that material is more comprehensive, if not more eloquent, than I can be this morning. Let me just summarize it by saying that the lie detector is a fear arouser and detecter. It is not a lie detector.

I would like to talk instead about some of the implications of lie detection and the use of polygraph tests for both employees and employers. I have four points that I would like to make which essentially say that from both perspectives the use of polygraph tests is inappropriate and problematic.

The first point in terms of employees is that truthful employees will be identified as liars at substantial rates, and this may affect their ability to obtain employment or remain employed. This may be particularly problematic for the most honest employees, as well as for the most intelligent employees.

Second, there is absolutely no evidence or screening test of polygraph use, but the control question test which is sometimes used by police and in other specific incident investigations, when it is used and to the extent that there is evidence that it may produce accurate results, it involve asking questions about areas of an employee's life and past history that are not germane to the job.

Third, a polygraph test is based on deception. Its accuracy is based on the subject's willingness to accept the examiner's arguments about the test's efficacy.

Fourth, the results of a polygraph test, although presented in the form of polygraph charts, are, in fact, based on the diagnosis, clinical judgment of an examiner, and as such they open up numerous opportunities for bias.

I think from the employer's perspective my scientific analysis suggests that tests are equally problematic.

First, whatever the test outcome, you can never know whether it is correct or not and you have got to use other means to verify it.

Second, given what one assumes are low rates of dishonesty and the propensity of polygraph tests to generate false positive errors, you are going to misidentify many more honest employees than will you find dishonest employees.

Third, polygraph tests may accomplish exactly the opposite of what an employer hopes. Your most honest employees may be the ones most easily identified as liars and highly dishonest employees may use a variety of countermeasures so as to appear honest.

Fourth, people have talked about the deterrent value of polygraphs, particularly in the employment context. DOD also talks about that. Over time the deterrent value of polygraph testing will greatly diminish. To the extent that individuals have access to the vast literature on the validity of polygraph tests and experience with testing, they are less likely to be afraid.

Several weeks ago in the floor debate in the House Chamber on an amendment to the DOD authorization bill your colleague, Congressman Brooks from Texas, noted that if, in fact—I think he said if, in fact, the cotton-picking lie detector or polygraph test were valid, every wife of a Congressman would run out and buy one. Fidelity of marriage aside, and, in fact, employment issues aside, if, in fact, the lie detector were really valid, if, in fact, we had a technology that could determine whether someone was truthful or not, it would revolutionize legislative, judicial and diplomatic interchange. In fact, we don't have such a device, and its use creates many problems.

Thank you.

Mr. **Martinez**. Thank you.

[Prepared statement of Leonard Saxe follows:]

PREPARED STATEMENT OF LEONARD SAXE, PH.D., ASSOCIATE PROFESSOR OF PSYCHOLOGY, BOSTON UNIVERSITY

I am pleased to submit this statement in connection with hearings on legislation introduced by Congressman Williams (HR 1524) and McKinney (HR 1924) to prohibit the use of polygraph tests by private employers. I am a research psychologist and was principal author of the U.S. Congress, Office of Technology Assessment (OTA) report, "The Scientific Validity of Polygraph Tests." I am currently Associate Director of the Center for Applied Social Science and Associate Professor of Psychology at Boston University. I appear today as an independent scientist and my comments do not necessarily reflect the views of Boston University or the Office of Technology Assessment. I would like to request that the OTA report on polygraph testing be incorporated into the record.

EFFECTIVENESS OF POLYGRAPH TESTS

From a scientific perspective, there is little evidence to suggest that polygraph tests are a valid means of verifying an individual's truthfulness or deceptiveness. Although polygraph tests, under certain circumstances, can be effective in eliciting veridical information, the conditions under which a polygraph test may be accurate have relatively little to do with the polygraph instrument itself. A polygraph instrument cannot detect truth or deceit, even in the hands of the most skilled examiner. Polygraph test techniques are based on deception, and their use, particularly by private employers, is open to wide abuse. Individuals who are honest may be misidentified as liars, and those who are dishonest may not be detected.

It is wholly inaccurate to refer, as has often been done, to the polygraph as a "lie dectector." The polygraph instrument records simple physiological reactions, including respiration rate, heart rate and perspiration. The physiological measures used in a polygraph test do not directly indicate deceptiveness. Lying, as far as psychologists and other researchers have been able to determine, produces no unique physiological response. The polygraph test is most accurately described as a method of interrogation. It encompasses ways to structure and ask questions about past events and to assess physiological reactions in response to these questions. A polygraph examination has characteristics of a psychological test, but by almost every psychometric criterion it is a poor test. The test is unstandardized and relies on the examiner's behavior and judgment.

To assess effectiveness, it is important to understand the underlying mechanism of polygraph testing. As best as I can determine, the mechanism by which a polygraph test gains information is *fear*. As long as individuals believe that a test can ascertain truthfulness, they may show highly arosed reactions to questions on which they are being dishonest and lower arousal in reaction to questions on which they are truthful. Much of the polygraph technique focuses on convincing subjects as to the efficacy of the procedure. Examiners refer to this as establishing "psychological set" and often involves conducting card tricks to stimuate the "right" beliefs about the machine. In this sense, a polygraph instrument is more like a theatrical prop than a truth verification machine.

Problems arise with polygraph tests when subjects are not culpable and do not believe in the efficacy of the test. In such cases, dishonest subjects may not be aroused and, thus, will not be detectable; innocent subjects may appear to be deceptive since they may fear the test. It is never clear whether fear of detection or some other factor is responsible for the arousal measured by a polygraph test.

The type of polygraph test most frequently used in employment settings is a form of testing called the Relevant/Irrelevant examination. It is the original form of polygraphic lie detection and has long been recognized as problematic. It is widely used, however, because it is easy to conduct in screening situations. Screening tests are conducted not to detect a specific crime, but to screen prospective or present employees for a range of dishonest behavior. In a typical R/I test used to screen prospective employees, the subject is asked a series of questions relevant to his or her background. Physiological recordings are made in response to questions about relevant issues such as previous employment and are compared to responses about irrelevant issues. Deceptiveness is inferred on the basis of differential arousal in reaction to the two types of questions. Some examiners rely on numerical scoring of physiological reactions recorded by the polygraph; most examiners, however, use the charts as one basis of their "clinical" judgment of the person's truthfulness.

The second type of polygraph test is called the Control Question test and is the basic form of testing used when a specific incident, such as a crime, is being investigated. In a Control Question test, in addition to relevant and irrelevant items, included are questions designed to be arousing even to innocent subjects. Thus, if thievery were being investigated, a control question would concern a person's history as a thief. The examiner would assume that the subject has stolen something, at some point in his/her life, and, thus, is sure that if a person denies ever stealing anything, they are lying. At least in theory, such tests control for the anxiety a subject may have about the examination.

Control Question tests are problematic, however, since one never know how arousing a control question actually is. If a subject is, indeed, truthful in answering a question about past thefts (not germane to the crime being investigated), then the subject is at high risk of being identified as deceptive (since "deception" is measured by comparing relevant and control questions). Naturally, a person questioned about a crime will be anxious, even if they are innocent. In addition, it is only possible to conduct such tests when the investigator is focused on a single, relatively narrow issue. Even if control question tests were possible, such as when a crime has been committed in the workplace, establishing control questions involves asking about areas of a subject's life not germane to their employment.

Although polygraph tests can be effective if the subject is convinced of the test's efficacy, that is not the same as the test being valid. It seems a poor basis to make critical decisions about an individual's life and to protect a company from thefts. That polygraph tests function as fear detectors is widely known. President Nixon once said, "I don't know how accurate [polygraphs] are, but I do know they scare the hell out of people." The question is whether a technology dependent on scaring the hell out of people is appropriate.

RESEARCH EVIDENCE

Systematic research on the effectiveness and validity of polygraph testing is relatively recent. Only a small number of studies (less than 50) of polygraph testing meet even minimal standards for scientific research. As part of the Office of Technology Assessment study, we conducted a comprehensive search for such work. Although anecdotal information and case study data care available, such work should not be confused with scientific research. Most research has been conducted in university laboratories and other analog settings, not in acutal situations where polygraph tests are employed. No more than a dozen minimally adequate studies of polygraph validity have been conducted in actual field settings. There are several reasons for his state of affairs: One is that the lack of a credible theory to explain why polygraph testing works inhibits established researchers from becoming involved. A second problem, widely discussed in the literature, is that it is extremely difficult to verify independently a subject's truthfulness.

The paucity of available research is particularly striking when one focuses on the use of polygraph testing in employment contexts. Virtually no evidence whatsoever exists to support the validity of R/I tests, the type of examination used to screen employees before and after hiring. No field studies to validate the accuracy of these widely-used employment tests have been conducted. Furthermore, only a very few analog studies have generated data about such examinations and these data provide an inadequate basis for generalizations about screening tests. Anyone who claims that polygraph testing in employment settings has been validated by research is either unaware of basic rules of inferrence or intentionally being deceptive.

Some research evidence exists about Control Question tests, such as those used in the investigation of actual criminal situations. This evidence, however, is confounded by host of factors that make interpretation almost impossible and its generalization to the employment contest inappropriate. The Office of Technology Assessment identified 10 studies of the field use of Control Question tests. Unfortunately, each of these studies has serious research design flaws. Problems include how the subjects were selected and the base rate of guilt or innocence. Furthermore, these studies are not representative of the subjects who are tested by employers or the situations encountered in employment settings.

Evidence on the accuracy of Control Question tests indicates accuracy rates that range from 70% to 99% for guilty subjects and 12% to 95% for innocent individuals. Although these data, which vary dramatically across studies, suggest that guilty individuals can be detected with reasonably high rates of accuracy, there are serious problems with drawing such a conclusion. One problem is that these studies have mostly been done with individuals accused of crimes of violence and, in fact, polygraph tests are better detectors of "person crimes" than property crimes. In addition, polygraph tests in criminal situations are likely to have been conducted after other evidence is available to link a suspect to the crime. It should also be recognized that chance accuracy is 50%. The lower rates of accuracy rates for innocent subjects is even more problematic and suggests that if large numbers of individuals are tested, there will be a substantial number of misidentifications. Although no data are available about R/I tests used in non-criminal situations, these problems can only be exacerbated.

Even proponents of polygraph testing concede that research evidence is poor. For example, the National Security Agency, the largest government use of polygraph tests, noted in a 1984 report, "The polygraph field is one of those rare situations where the practice has outpaced the research." Although they contend that available research indicates accuracy results that are significantly better than chance, the report indicates that, "it is not possible to estimate the accuracy of the polygraph . . . and . . . a great deal of government usage involves screening, but there is little evidence on the accuracy of the polygraph in screening situations."

Other polygraph proponents have admitted that scientific evidence is lacking, but claim that the polygraph technique has utility, somewhat akin to effectiveness discussed above. As evidence, numerous cases are cited of individuals who have been identified as being deceptive through polygraph tests. No doubt such data are accurate and, in fact, sometimes information is gleaned from polygraph tests that would otherwise not be obtained. Research, however, does not enable us to determine whether this is the result of factors intrinsic or extrinsic to the polygraph instrument. Such a determination is essential to make decisions about use of the polygraph tests.

Not only does research suggest that polygraph tests are very imperfect determiners of veracity, especially when used as screening tools, but there is also increasing evidence to suggest that they can be defeated. On an R/I test, just as the person's level of concern for the issues being tested and general level of anxiety can produce a false positive, so, too, can simple techniques be used to increase autonomic reactions to irrelevant questions and produce a false negative. Recent evidence, from an analogue study of a Control Question test, suggests that subjects with minimal training can defeat the examination almost 50% of the time. The countermeasures used were physical techniques such as squeezing the toes. There is also evidence that errors are more likely to occur when the subject is intelligent.

IMPLICATIONS FOR EMPLOYMENT PRACTICES

As a scientist who has examined objectively the theory of polygraph testing and available research information, it is inappropriate for me to answer questions about alternative personnel practices. I can, however, draw a number of implications of the use of polygraph testing for both employees and employers. The issues are not very different for both groups and the conclusion that polygraph tests are unsuitable is consistent.

Employee perspective.—From the employees' perspective, a number of specific problems with polygraph tests can be identified, each of with argues against prospective or present employees agreeing or being compelled to take a polygraph examination.

(1) Truthful employees will be identified as liars at substantial rates and this may affect their ability to obtain employment or to remain employed. Such misidentification and branding of individuals as deceptive is particularly problematic for people who are very concerned with their honesty and may be exacerbated for intelligent and non-culpable employees.

(2) If a Control Question test is used, it involves asking about areas of an employee's life and past history not germane to the job. As such, these questions, necessary for the conduct of polygraph tests, represent an invasion of privacy.

(3) The polygraph test is based on deception. Although it is presented and has the appearance of a sophisticated psychological test, it meets few of the accepted standards. Furthermore, its accuracy is, in part, based on the subject's willingness to accept the examiner's arguments about the efficacy of testing.

(4) The results of a polygraph test, although presented in the form of polygraph charts, are based on the "diagnosis" of an examiner. Such diagnoses represent the examiner's subjective judgment, rather than a direct indication from the polygraph instrument, and open numerous possibilities for bias.

Employer perspective.—From a company's perspective, a parallel set of issues about polygraph testing arise from an analysis of its scientific validity.

(1) Whatever the test outcome, one can not be sure it is correct and there are no means (particularly for screening tests) to make probabilistic statements about accuracy. Verification of a polygraph test can only be done through standard means of corroborating information.

(2) Given low rates of dishonesty and the propensity of polygraph tests to generate false positive errors, many more honest employees will become suspect than will dishonest individuals be identified.

(3) Polygraph tests may accomplish just the opposite of what is expected. Because exceptionally honest and intelligent individuals may be highly reactive to questions about their truthfulness, such desirable employees will be misidentified at higher rates than other less desirable employees. In addition, highly dishonest employees have available a variety of countermeasures and may be consistently misidentified as honest.

(4) Over time, the deterrent value of polygraph testing will greatly diminish. To the extent that individuals have access to the vast literature on the invalidity of polygraph tests and experience with testing, they will be less likely to be afraid. In addition, some errors in testing are likely.

FINAL COMMENT

It would, perhaps, be comforting if human beings were constructed so as to be physiologically transparent when they engage in dishonest behavior. Then, it might be possible for a device such as a polygraph to reliably and validly assess their truthfulness. Such is not the case, however, and it may be fortunate. The implications of a machine that could pierce an individual's innermost thoughts would be frightening. Its effect on employees and employers would, perhaps, pale in comparison to the impact on legislative, judicial and diplomatic interchange.

Mr. Martinez. Our next is David Lykken.

Mr. Lykken. David Lykken, Mr. Chairman. Thank you. I am a professor of psychiatry at the University of Minnesota where I have been keeping an increasingly jaundiced eye on the polygraph profession for about 30 years.

Dr. Saxe's testimony and his written testimony is so comprehensive that I'm not going to rehearse that, but merely try to hit a few highlights.

My own reading of the scientific literature indicates that the polygraph test as given by well-trained examiners doing the best they can, because in these tests they knew that they were going to be checked up on by an objective criterion, that the polygraph test is wrong about a third of the time overall, and that it is biased against the truthful individual. There is a recent study, not yet published, coming out of Canada that I have seen in manuscript which corroborates these findings. And in that study 40 percent of the innocent people were erroneously classified as deceptive on the basis of a polygraph test.

Dr. Saxe has pointed out that there has been no study of the type of test used in the screening situation. We are working completely in the dark there. But it is customary for the polygraph industry themselves to say that that type of test is less valid than the control question test which has been studied to a limited degree. There is not even a study done either in the private sector or by the Department of Defense to show that their screening programs pay off, that they result in reduced losses or in reduced spy scandals and the like. No scientifically controlled tests of this kind.

Now, in the same debate that Dr. Saxe referred to in Congress a few weeks ago, one of the Members pointed out that it may be true that the scientists have been unable to establish the validity of the polygraph, but, he said, the scientists aren't running our security agencies. General So-and-So and Admiral So-and-So is running these agencies and they say that the polygraph is valuable.

That sounds like a reasonable sort of a statement, but we must ask ourselves on what basis these agency heads have established their faith in the instrument. The only basis that they have to go on are the assurances of their senior polygraph examiners and on the anecdotes, the examples of spies that have failed polygraph tests and have subsequently been caught. I would like to comment on the value of that sort of evidence.

In the first place, a polygraph examiner is in a peculiar position. He is one of the few people I know of who can go on in an active career year after year, giving maybe a thousand examinations every year, and almost never discover after the fact, after he has made his diagnosis and issued his formal report, almost never discover whether he was right or wrong. And in the absence of this sort of corrective feedback it is natural for these people to continue to believe the myths of their profession, what they have been taught in the polygraph school. That this is an extremely accurate procedure and that they are working in the social interest.

I tell you, with all due respect to my many friends in the polygraph profession, that their assurances are valueless, and that the last person to ask about the accuracy of the polygraph is a professional polygraph examiner.

Now how about these examples, these instances of polygraph successes? Remember that in the polygraph business you are trying to find out whether somebody is lying or not. It is a dichotomous decision. And I can detect lying with about 50 percent accuracy merely by flipping a coin. If the DOD, for example, is going to give 10,000 tests next year, even if they do it by flipping a coin, they are going to be right thousands of times. And on some of those occasions they will find out afterwards that they have been right, and they will be able to compile a list of successes. But we have got to remember that these success stories are equally meaningless. The witch doctor, the graphologist, the astrolger—also has his list of successes.

In my State, Minnesota, we were successful in 1976 in passing one of the few really effective antipolygraph statutes. A statute that has been confirmed by our supreme court recently. And that statute works. It is successfully prohibiting the use of the polygraph in the private sector. And I would like to point out that retail businesses and other concerns operating in Minneapolis seem to be doing very well. At least as well as those companies doing business in Atlanta, for example. In Atlanta, where there are something like 40 private polygraph firms that advertise in the Yellow Pages, a person whose heart pounds and whose palms sweat when he is hooked up to this magic machine and asked personal questions might just as well give up and go on relief, because he is not going to get a job in Georgia.

I believe, as Dr. Saxe suggested, that many of these screening programs, both in the Federal Government and in private industry are counterproductive; that they have the effect of moving some of the really bad apples to the top of the list and eliminating from employment some of the very best people, who the studies show are the kinds of people who are most inclined to fail polygraph tests although telling the truth.

So it is my opinion that these bills under consideration would not only prohibit hundreds of thousands of un-American indignities being perpetrated each year, thousands of personal tragedies, but I think they would probably serve to save American employers a lot of money.

Thank you..

Mr. MARTINEZ. Thank you, Mr. Lykken.

[Prepared statement of David J. Lykken follows:]

PREPARED STATEMENT OF DAVID T. LYKKEN, PROFESSOR OF PSYCHIATRY AND PSYCHOLOGY, UNIVERSITY OF MINNESOTA

Mr. Chairman and Members of the Committee: The polygraph or "lie detector" test is wrong about one-third of the time over-all, and it is strongly biased against the innocent or truthful subject. This basic truth about the lie detector is one of the best-kept secrets around. Americans have been so brain-washed with lie detector propaganda that most citizens believe that there exists some device or technique that can literally detect when someone is lying. Even after they become polygraph victims, branded as liars by test error, many people are inclined to think that theirs was a rare case, that they were just especially unlucky.

I know of several individuals who actually believed the test rather than their own memories, who concluded that they must be guilty if they failed the polygraph and that perhaps they'd had a "blackout" or something and forgotten the crime. Polygraph victims are reluctant to talk about their bad experience with the lie detector because they think other people will assume that they are liars. Nevertheless, I have accumulated a drawer full of real-life examples.

Most lawyers, decision makers, and public figures also seem to be unaware of the lie detector's guilty secret. Courts in about half the states will admit polygraph results into evidence upon stipulation of the parties. Prosecutors in these states, who think they can't win a pending case, will sometimes offer to dismiss charges if the defendant can pass the lie detector. Defense attorneys in these cases, confident of their client's innocence, accept this deal only to discover, when their client fails the test, they have given the prosecution just what it needs to convict.

Every year we hear of politicians and other public figures, their word or honor questioned, offering publicly to submit to a polygraph test to establish their integrity. Here in Washington, the Pentagon and the security agencies seem to have unshakeable faith in the polygraph. Each time some employee with Top Secret clearance, obtained and maintained by passing polygraph tests, is revealed to be a spy, this government's reaction is to call for still more polygraph testing!

Even the polygraph examiners themselves don't know the secret. To put it another way, most of the thousands of polygraph examiners who are part of the booming lie detector industry in the U.S. actually believe the claims of the industry spokesmen, that the polygraph test is 90, or 95, or even 99 percent accurate. I heard one polygrapher testify that he had given more than 20,000 tests in his career and he had never been shown to have been wrong! He neglected to add, however, that he had seldom if ever been shown to be right. The typical polygraph examiner, after he has administered his test, reported his conclusion, almost never finds out for sure whether he was right or wrong. With the possible exception of the clergy, I know of no profession whose practitioners get so little definite feedback concerning the accuracy of the information they purvey. It's natural, therefore, for these polygraphers to continue to believe what they are taught in polygraph school, that their technique is highly accurate and that they are working in the public interest.

The lie detector's guilty secret is that the test itself frequently lies; nearly one-third of the time, the polygrapher's diagnosis will be wrong. If the suspect being tested is in fact innocent, there is about a 40 percent chance that he will be classified as "deceptive." These assertions are based on the results of 3 studies of the accuracy of polygraph testing in real-life applications. Two of the 3 studies were conducted by professional polygraphers who were hoping to produce a good result, so we don't have to fear that the results are biased. A fourth study, with similar findings, has just been completed at the University of British Columbia, but that one is not yet in print. These are the only studies of polygraph accuracy that I think have any scientific credibility.

These studies tell us about the accuracy of the control-question polygraph test. This is the type of test most often used in criminal investigation, either by the police or by polygraphers working for private employers who are trying to find out who stole something at the office or factory or shop. The control-question technique is generally considered to be the state of the art, the most accurate form of polygraph test available. The test used in screening employees or job applicants is usually a different type, known as the Relevant-Irrelevant test. Considering how widely used this technique is, considering that it is the basis for a multi-million dollar industry, it is absolutely astonishing to discover that there is no credible scientific research at all on the accuracy of the screening type of test. There is not even good indirect evidence, no properly controlled study to determine whether starting a polygraph screening program actually reduces inventory shrinkage or improves the calibre of the work force.

In 1984 there appeared a document published by the Department of Defense entitled "The Accuracy and Utility of Polygraph Testing." This document was written by a group of senior polygraph examiners in DoD. The group leader, Norman Ansley, is the chief polygrapher for NSA and also serves as editor of the trade journal published by the American Polygraph Association. The scientific editor for the report was Gordon Barland, who runs a private polygraphy business in Salt Lake City. This is an interesting and useful document in which this group of professional polygraphers—who represent certainly the very top level of their guild—make an all-out effort, and one must assume their very best effort, to justify the way they make their living. The effort fails. A long list of studies are summarized there, studies seeming to show high accuracy for the polygraph. This document might tend to impress the casual reader and if the Committee would give me a couple of hours I would be glad to offer a detailed critique. Since that isn't feasible, let me give just one example of why I think this particular exercise in special pleading should not be given any weight at all.

One of the many studies paraded in the DoD report was done by a police polygrapher is the State of Virginia. This man, whose name is Edwards, sent a questionnaire to all the licensed polygraph examiners in Virginia asking them how many of the tests they had personally conducted the year before had turned out to be correct. Only a minority of the polygraphers contacted replied. Of those who did reply, the average examiner claimed to have been correct more than 98 percent of the time! I can assure this Committee that if we were to send a similar questionnaire to all of the licensed astrologers in Virginia (or the graphologists or tea leaf readers), we would get similar results.

The Defense Department, which uses polygraphy so enthusiastically, has never sponsored a scientifically respectable study on the value of its polygraph screening programs. It can trot out examples of spies who have confessed during polygraph tests or of suspected persons who have passed lie tests and then are later cleared by other evidence. One must remember that if we identified liars by tossing a coin instead of using the polygraph, we should still make the correct decision about half the time in the long run. The Pentagon gives thousands of tests each year and so it would be correct thousands of times each year even if the tests are worthless. Examples of test successes are totally meaningless as evidence in favor of polygraphy—astrologers and witch doctors also have their lists of dramatic successes.

When we ask the DoD how well polygraph screening has worked for them, therefore, we do not get real evidence, since there isn't any, but instead we get enthusiastic testimonials from the DoD's polygraphers. The same thing happens when we ask American business how it likes the polygraph. There are no actual studies proving that it saves them money or yields a better work force. Therefore, the people who answer our inquiry are either polygraphers again, and hardly disinterested witnesses, or else they are the personnel managers or chiefs of security who invested in the polygraph program and who need to defend the wisdom of their investment. Since our concern is with the welfare of the chicken coop, we ought not to turn to the foxes for advice.

I firmly believe that our federal security agencies would get and keep better personnel and that there would be fewer spy scandals if polygraph screening were totally abandoned. I believe that we screen out some of the very best people and that we screen in some of the worst, people like the CIA's Edwin Wilson, for example, who must have passed numerous polygraph tests before setting up as an advisor to Muammar Qaddafi. And I am certain that depending on the false security provided by polygraph screening has caused our government to put less effort than it should have done into the more difficult but more reliable methods of preventing theft,—theft of material or of secrets.

As for the private sector, I don't think that Sears Roebuck, who do not require their employees to submit to polygraph tests, has lower profits or more dishonest employees than does Montgomery Ward, who do use the lie detector in those states that permit it. Retail businesses in Minneapolis seem to be doing just as well as those in Atlanta, yet they are prevented by law in Minnesota from using the polygraph while a Georgia citizen, whose heart pounds and whose palms sweat when they attach him to the polygraph, might just as well go on relief.

I believe that a law prohibiting the use of the polygraph on employees in the private sector will not only prevent hundreds of thousands of unAmerican indignities and thousands of personal tragedies each year, I think it will save American business a lot of money.

This issue is devoted to:

LIES, SECRETS, AND SOCIAL CONTROL

Edited by: CARL B. KLOCKARS
University of Delaware

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Detecting Deception in 1984

DAVID T. LYKKEN
University of Minnesota

In God We Trust: Others We Polygraph
— Motto on an office wall,
The Pentagon, Washington, D.C.

The U.S. government has become increasingly dependent upon the so-called lie detector or polygraph test to keep its secrets, foreign and domestic. In 1979 a committee of the House of Representatives discovered that federal security agencies — the CIA, the NSA, the Defense Intelligence Agency, and others — for years have been relying upon polygraph testing to screen case officers, agents, and spies (U.S. Congress, 1979). In January of 1982 the Pentagon's Defense Resources Board, including such high officials as the secretaries of the Army and the Air Force, met to discuss cost projections for the administration's rearmament program. A highlight of that meeting, that the program would cost some $700 billion more than the public had been told, appeared the next day in the *Washington Post*. Secretary Weinburger, outraged by this leak, required all members of the board to submit to polygraph tests in (vain) hopes of discovering its source (Fialka, 1982). Undeterred by this fiasco, President Reagan, on March 11, 1983, signed an executive order requiring hundreds of thousands of federal employees to undergo lie detector tests in any investigation of information leaks; those who refuse are to suffer "adverse consequences" (Safire, 1983).

In the American criminal justice system, prosecutors in many parts of the United States rely on the results of polygraph tests in deciding which suspects will be prosecuted and who will be set free. In a number of jurisdictions, rape charges will not even be investigated until the alleged victim has managed to pass a lie detector test.[1] Nearly half of the states admit polygraph results as evidence in court providing both sides have so stipulated in advance of the testing.[2] In

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Massachusetts and New Mexico, either side can introduce such evidence without prior stipulation. In 1983, the California State Legislature passed an "emergency statute" that prohibits introduction of polygraph findings in criminal trials without the agreement of both parties.

Meanwhile, in the private sector, some 30% of the Fortune 500 companies are reported to make use of the polygraph for preemployment testing, for periodic screening of employees, or in the investigation of possible employee theft, sabotage, or other misconduct (Belt and Holden, 1978). At least 8000 polygraph examiners are now practicing in the United States, trained in one of dozens of polygraph schools (26 in Florida alone!) that offer courses of instruction lasting six to eight weeks.[3] A daily television program, *Lie Detector,* hosted by celebrated attorney F. Lee Bailey urges potential participants, "Bring us your question. We'll give you the truth!" Volunteers wishing to affirm or refute some allegation that is important in their own lives are tested right in the studio and then dramatically endorsed as truthful or denounced as liars by Mr. Bailey, after he and polygrapher Ed Gelb, a past-president of the American Polygraph Association, have examined the polygraph charts. This program, Mr. Bailey proudly asserts, is dedicated to the principle that "every American has the right to prove his innocence" — by submitting to the lie detector.

An older principle, one apparently not taught at Mr. Bailey's law school, holds that Americans do not have to prove their innocence, that one is *assumed* to be innocent until one's accuser, within the constraints of due process, has managed to prove one's guilt. Yet, if there exists a simple test that with sure and scientific accuracy, can separate the truthful from the liars, then, one must admit, that old constitutional principle indeed may be pàssé.

The leading textbook of lie detection claims that, in competent hands, the polygraph technique leads to fewer than 1% errors (Reid and Inbau, 1977: 304). In 1982, a San Francisco television station (KRON-TV) did a survey of the lie detection firms in the Bay Area and found that their claims of accuracy ranged from 95% to 100%. David Raskin, one of the handful of practicing polygraphers who have training in psychology or psychophysiology, has asserted that the lie detector is 95% accurate "even on convicted felons" (Dunleavy, 1976). As Stanley Abrams (1977), another psychologist-polygrapher, points out, not the Rorschach, the Minnesota Multiphasic Personality Inventory, nor any other psychological test in common use can separate the truthful sheep from the deceptive goats with anything approaching such validity. Abrams might have added that no jury of twelve laypersons could be expected consistently to separate the innocent from the guilty, even after hearing masses of evidence and deliberating perhaps for days, with 99% accuracy. If the lie detector is as accurate as the industry claims, must we not in the interests of justice replace the jury box with a polygraph machine? In the interests of efficiency replace protracted and expensive trials with a simple and impartial test? Since the internal logic of his position seems to argue the demise of his profession, one can only admire defense attorney Bailey's selfless advocacy of the polygraph test.

WHAT IS A POLYGRAPH TEST?

The polygraph instrument used in lie detection records four channels of information on a moving paper chart. Two of the four pens are connected to pneumatic tubes strapped about the examinee's chest and stomach; these pens record thoracic and abdominal breathing movements. A third pen is connected to an ordinary blood pressure cuff on the subject's upper arm. At the start of a question series, this cuff is inflated to partially occlude the flow of blood in the arm and then, with every heartbeat, the pressure in the system varies about this arbitrary mean value. Thus, the "cardio" pen deflects with each heartbeat and the entire tracing moves up or down with transitory changes in blood pressure. The fourth pen is connected electrically to metal electrodes attached to two fingers of the subject's hand. This is the "electrodermal" channel, which records wavelike changes in the electrical resistance of the skin that are in turn related to the sweating of the palms. Another instrument, known as a "voice stress analyzer," has become popular in recent years for purposes of lie detection. Because they require no attachment to the subject, voice analyzers can be used covertly, even over the telephone, and are used, for example, by insurance adjusters for evaluating the truthfulness of claimants.

Contrary to popular belief, there is no such thing as a literal lie detector because there is no distinctive involuntary reaction that people produce when, and only when, they are lying. The polygraph and, possibly, the voice analyzers are sensitive to emotional disturbance or stress but they are intractibly ambiguous with respect to the nature and source of that stress. An experienced examiner may be able to determine from the polygraph chart that your reaction to question A was stronger than your reaction to question B, but no one, no matter how experienced, can tell from the chart *why* you responded as you did, whether the question made you feel guilty, or frightened, or angry, or indeed whether you artificially induced the reaction by, say, biting your tongue after answering the question. For the first thirty years or so of the polygraph's history, examiners assumed that a strong emotional reaction to an accusatory question was ipso facto evidence of guilt and the attempt to deceive. In a tract published in 1730, Daniel Defoe expressed the same idea: "There is a Tremor in the Blood of a Thief that, if attended to, would effectually discover him." What the early polygraphers, like Defoe, failed to recognize is that there is also a tremor in the blood of the innocent accused — and the polygraph cannot detect the difference.

In the late 1940s, because of this ambiguity of the polygraph's message, a new question format was developed that has now become standard in the industry (Reid, 1947). Because of the discomfort of the blood pressure cuff, only about ten questions can be asked in any one series before the cuff pressure must be released for a time. In the modern "control question" polygraph test, these questions are a mixture of three types: (1) *irrelevant* questions (e.g., "Is today Tuesday?") used as buffers or strain relievers; (2) *relevant* questions (e.g., "Did you shoot William Fisbee on May 21st?") which are the true focus of interest; and (3) *control* questions (e.g., "Before two years ago, did you ever deliberately hurt anyone?"). It is intended that the subject will answer these control questions in the negative and, moreover, that his or her answer will be deceptive or at least that he will be uncertain as to whether his or her answer is really strictly true. These questions are developed and reviewed with the subject during the pretest interview and the examiner attempts to convey the impression that the examinee will be regarded suspiciously or placed in a bad light if he or she does not answer each control question "No." The ten questions in a typical control-question test will include three relevant questions interpersed with three control questions and the entire list will be repeated from three to five times.

The control-question test rests on two basic assumptions: First, it is assumed that a guilty person who must answer the relevant questions deceptively will be most disturbed by these questions and therefore that the polygraph chart will show the largest perturbations following the relevant questions. Second, it is assumed that an innocent person who answers the relevant questions truthfully will be more disturbed by the control questions than by the relevant ones (see Lykken, 1981, for a more detailed analysis). Many polygraph examiners still arrive at their conclusions intuitively, combining what they know of the case facts, their observations of the subject's behavior and demeanor during the test, plus what they infer from the polygraph recordings into a global or clinical judgment of truth or deception. A growing trend among polygraphers, however, is to try to base the conclusion solely on the charts, employing toward this end one of several relatively objective methods of "numerical scoring." Each pair of reactions to adjacent relevant and control questions is compared, separately for each channel. If the response to the relevant question is larger, a score of −1 or −2 is awarded; if the response to the control question is larger, the score may be +1 or +2. If the control and relevant responses are about equal, the score is zero. These scores are summed over all four channels, over all pairs of questions, and over all charts. If the total score falls within an arbitrary range about zero (for example, from −6 to +6), the test is considered to be inconclusive. Negative scores outside this range (such as −7 or larger) are construed to indicate deception. To pass a control question polygraph test, one much achieve a positive score (e.g., +7 or larger) by reacting rather consistently more strongly to the control questions than to the relevant or "Did you do it?" questions.

HOW ACCURATE IS THE LIE DETECTOR? PART I

As with any psychological test, we can ask two separate questions about the lie detector: (1) How *reliable* is it? (That is, how consistently does it yield the same results?) (2) How *valid* is it? (That is, how accurate are its results?) The reliability of the lie detector could be measured either by having the same subjects tested more than once or by having the results of a single testing scored independently by different examiners. Reliability is important because a test that is not reliable cannot be valid. The only voice stress analyzer that has been extensively studied by independent researchers, the Psychological Stress Evaluator (PSE); fails by the reliability criterion. Different trained examiners apparently cannot agree about the interpretation of PSE charts at much better than chance levels (Lykken, 1981: 151-161).

To assess the validity of the lie detector, one must have an independent criterion of "ground truth" — of who was telling the truth and who lying. This is easily done in the laboratory, where one need only instruct one group of volunteer subjects to lie and another to be truthful. But one cannot simulate in the laboratory the kinds of emotional stresses nor impose the serious consequences that are associated with the lie detector test in real life; since the procedure depends directly upon the subject's emotional reactions, this is a fatal limitation. The accuracy of the lie detector in real-life applications can properly be studied only in real-life situations where it is the subject alone who, privately, decides whether to be truthful or deceptive. Ground truth here is harder to determine. Thanks to the extensive current use of the polygraph, however, cases can be collected in which the respondent subsequently confessed his or her guilt, showing that he or she had been deceptive when tested, and other cases where the respondent has subsequently been cleared of suspicion by the confession of some other person. Another method has been to submit dossiers of evidence on each tested suspect to a panel of experts (such as criminal lawyers or prosecutors) and use the panel's judgment as a criterion. A third method makes use of jury verdicts reached after conventional criminal trials. None of these criteria is perfect. Suspects who eventually confess may not be representative of guilty suspects generally. Juries under our traditions are presumably biased toward not guilty verdicts. Even panels of experts are fallible especially since the dossiers of evidence that can be accumulated in criminal cases are often not dispositive. As is common in applied research, therefore, it is difficult for any single study to produce definitive results and one looks instead for general agreement among properly designed studies using different methods.

All of us are "human lie detectors," capable of assessing the credibility of witnesses with accuracy at least better than chance. Experienced polygraphers undoubtedly have similar abilities and, when the examiner who administered the test also scored the charts, we cannot tell what portion of the accuracy achieved was due to his or her assessment of the case facts or the subject's behavior rather than to the polygraph findings themselves. Therefore, another requirement for the scientific study of the validity of the lie detector is that the charts must be scored independently ("blindly") by a second examiner who knows nothing about the case or the respondent. Finally, it is necessary that the charts evaluated must be an unselected or representative sample of polygraph tests administered in the given setting. If the verified charts that are to be rescored are selected by a polygrapher who makes sure that those from guilty suspects *ought* to be scored "deceptive" and that those from innocent suspects look like "truthful" charts *should* look according to polygraph doctrine, then obviously the subsequent rescoring will give a false impression of high accuracy. Such a study actually estimates polygraph reliability rather than validity — the extent to which the polygraphers doing the rescoring agree with the polygrapher who selects the charts in the first instance. The reliability of psychological tests is normally higher than the validity; when the apparent validity approximates the known reliability of scoring, this is a clue to the possibility that the charts have been improperly preselected.

That such egregious violations of proper experimental design should occur in alleged studies of polygraph validity should surprise no one, and for at least two reasons. First, the polygraph industry in the United States is large and profitable and when polygraphers themselves assess the validity of the technique on which their livelihood depends, it is asking a lot to expect them to resist tipping the scales in favor of a good result. Second, most polygraphers are innocent of any training in psychological research techniques or in the rudiments of scientific method; many invalid studies of polygraph "validity" should be attributed to scientific naiveté rather than to deliberate cheating. Before proceeding to a consideration of the scientifically credible studies of lie detector accuracy, it will be worthwhile to clear the decks first by briefly considering a few that are less credible.

A witness at hearings before a U.S. Senate subcommittee in 1977 was a Vermont physician named J. W. Heisse, Jr., the president of an organization of voice stress analysts, persons who employ the PSE "voice stress" device in giving lie detector tests to employees and job applicants for their clients in the business community. Heisse reported a study purporting to show that the PSE detects lying with 96% accuracy (U.S. Congress, 1977). The study was conducted by inviting 12 PSE examiners to submit charts from verified cases to be rescored "blindly" by other examiners. A total of 52 such charts were "selected" (27 of them provided by Heisse himself) and submitted to 12 PSE examiners for rescoring. Since some of the rescorers had also submitted one or more charts, there should have been at least 11 rescorings of each chart, but, for unexplained reasons, only 5 rescorings are reported.

The faults of this study are legion. First, the "verification" of the tested person's actual guilt or innocence was essentially left to the original examiner's opinion. Second, if all of the rescorers actually rescored all of the charts, as should have been done, then more than half of these rescorings are inexplicably left out of account. Third, and fatal to the entire enterprise, the original charts to be rescored in this study of PSE "validity" were selected first by the original examiners themselves and then apparently selected again by Heisse. If a professional PSE examiner is invited to submit for formal rescoring verified charts from his collection, can we really suppose that he will offer charts that he scored incorrectly in the first instance? If Heisse, who is conducting this study to confirm the accuracy of this technique from which he makes his living, receives a verified guilty chart that he would score as "truthful," or a verified innocent chart that he would score as "deceptive," are we to suppose that he would nonetheless submit this mischievous chart to his 11 colleagues for rescoring? Studies of the PSE by investigators having no personal stock in the outcome have consistently found that pairs of trained "analysts" cannot agree in their scoring of a truly unselected run of charts at much above chance levels. Studies reported by professional PSE examiners, untrained in scientific method, have consistently reported remarkable validity. The reader can be left to draw his or her own conclusions.

A number of polygraph studies must be rejected from serious consideration for similar reasons. The inventor of the control-question procedure, the late John Reid, attorney and founder of the Reid College for the Detection of Deception in Chicago, and his then chief examiner, Frank Horvath, published such a study in 1971 (Horvath and Reid, 1971). These authors obtained 75 verified polygraph charts from the files of the Reid firm and then had 40 of them independently rescored by 10 trained polygraph examiners, 7 of whom had more than a year's experience in the polygraph business. These 7 experienced examiners, on the average, scored about 91% of the 40 charts correctly. But 35 of the original 75 charts were never rescored at all, either because they were "dramatically indicative of truth or deception" *or* because they were "uninterpretable by even the most skilled examiner." It is plain that these authors did not mean to attempt a deliberate fraud, since, if that was their intention, they would never have mentioned the 35 excluded charts at all. But it is also plain that the 91% "accuracy" achieved by the blind scorers was not an estimate of the typical validity of polygraph testing within the Reid organization; instead, it provides an estimate of the extent to which examiners trained in the same school of chart intepretation are able to agree in their scoring with one another — it is an estimate of reliability rather than validity. Since it is based on selected rather than representative charts, it may be an overestimate even on interscorer reliability.

Three similar studies from the Reid group, published in the same nonrefereed journal and lacking sufficient documentation for a reader to be sure exactly how they were conducted, employed a design like that of Horvath and Reid and seem to have suffered from similar defects (Hunter and Ash, 1973; Slowick and Buckley, 1975; Wicklander and Hunter, 1975). Hunter and Ash, for example, had seven polygraphers rescore ten verified truthful and ten verified deceptive charts from cases tested by polygrapher Hunter; the method of verification is not specified. The blind rescoring agreed with Hunter's original scoring about 86% of the time. It is not stated in the article how the charts were selected and the second author, a psychologist, has assured me that *he* did not select them on any basis. One can assume, however, that Hunter, a professional polygrapher, did not offer for rescoring in this study any charts on which his own original scoring had been proven incorrect by the subsequent criterion of ground truth (whatever that might have been).

The most recent example of such a pseudostudy of polygraph validity was published in the trade journal *Polygraph* in 1982 by a polygraph examiner employed by the Virginia State Crime Laboratory (Edwards, 1982). This 41-page article, with its 12 bar diagrams and its statistical appendix, describes a study in which all licensed polygraph examiners residing in Virginia were invited to provide, via a mailed questionnaire, the following information: (1) how many polygraph examinations they had conducted in 1980; (2) how many of these cases had been subsequently verified to the examiner's satisfaction; and (3) of the verified tests, how many had been correct. Reports were received from 41 of Virginia's 147 examiners, who had, collectively, conducted 2620 polygraph tests in 1980. The average number of tests per active examiner was 85, a figure that does not include the type of screening test used with job applicants; only 13% of the private examiners responded to this survey. The respondents, mostly police polygraphers, claimed to have been able to verify about 40% of the tests they administered and, on this set of verified cases, they reported that they were correct in their polygraph interpretations more than 97% of the time. It seems supererogatory to criticize this alleged study in detail. One wonders what would happen if one were to send a similar questionnaire to all of the licensed astrologers in the state of Virginia, asking how many predictions they had made during 1980, how many had been "verified," and how many of these had proved correct. As long as the American Polygraph Association, publishers of *Polygraph*, continues to encourage such pseudoscience, it will be difficult to take that organization or its claims seriously.

HOW ACCURATE IS THE LIE DETECTOR?
PART II

There now have been reported three studies of polygraph accuracy that meet reasonable standards of scientific credibility. All three used polygraph tests administered to criminal suspects under real-life conditions. All three employed independent rescoring of the charts by trained polygraph examiners other than those who administered the tests. All three obtained reasonable criterion data using either confessions or, in one case, a panel of judges or lawyers. Finally, in none of the three studies were the charts selected for rescoring because some polygraph examiner believed that, when rescored, they should be scored correctly. Two of three studies were doctoral dissertations conducted by trained polygraph examiners who had gone back to their universities for advanced degrees. In the first of these, Gordon Barland administered control question lie tests to 92 criminal suspects referred by local police agencies while his academic adviser, David Raskin, who is also a professional polygrapher, scored the charts independently (Barland and Raskin, 1976). Raskin's scoring was appropriately cautious; he classified more than 20% of the charts as inconclusive. The panel of experts who evaluated the dossier of evidence on each case (two prosecutors, two defense attorneys, and one judge) were also apparently cautious, discarding some 30% of the cases as indeterminate. This left 51 cases on which there was both a criterion judgment and a definite conclusion of "truthful" or "deceptive" by the polygrapher. Since Raskin scored more than 88% of these charts as deceptive, it is perhaps not too surprising that he correctly classified all but one — 98% — of the guilty suspects. He did this, however, at the expense of the innocent suspects, 55% of whom were erroneously classified also as deceptive. Raskin's average accuracy overall can be obtained by averaging his success rate on the guilty and innocent subgroups, (98 + 45)/2 = 72%.

Horvath, formerly chief examiner for the Reid firm, published his doctoral dissertation in 1977. From the files of "a large police agency," he obtained 56 charts from cases that had subsequently been verified by confession. These charts were independently rescored by 10 experienced polygraph examiners. The interscorer agreement achieved was quite good, about 89%. Of the guilty suspects, 77% were correctly classified as deceptive, while 51% of the innocent suspects were classified as truthful. Thus, as in the Barland and Raskin study, about half of the innocent suspects were misclassified "deceptive" by the polygraph test. The overall accuracy was (77 + 51)/2 = 64%.

It must be said that, since the publication of these two studies, apologists for the polygraph industry have tended to denigrate them, insisting that these findings — and especially these alarming rates of false-positive errors — are not representative of actual polygraph practice. Yet there is every reason to suppose that both studies were conducted carefully and honestly, under the supervision of experienced scientists; there is no reason to suppose that the authors, polygraphers themselves, had hoped or expected to produce such embarrassing findings; and I can find no serious flaws in the designs. The implication that an innocent person has about a 50:50 chance of a polygraph test administered under real-life conditions must be tempered by the realization that it is usual in practice for several suspects to be examined with respect to any given crime and the examiner is able to withhold judgment until all results are in. In the recent Pentagon scandal referred to at the start of this article, one would not have expected 18 of 36 officials examined to have "failed" their polygraph tests and then be accused of leaking information to the *Washington Post*. Quite understandably, the examiners in that case tested everybody and then selected that one individual whose tests results seemed most obviously deceptive. As it turned out, they were mistaken in their choice. When that individual was identified and about to be fired and his career destroyed, George Wilson, the *Post* reporter who had printed the story, told the secretary of defense that, while he would not reveal his actual source, the man who had been selected by the polygraphers was not the culprit.

One aspect of the Barland and Raskin study deserves further comment. It is reported that 16 of the 51 cases that figured in that study were subsequently confirmed by confession. The charts from these 16 cases were submitted to 25 polygraph examiners for independent scoring. Excluding charts scored as inconclusive, these blind rescorings were correct 90% of the time. The 7 examiners who scored the charts numerically, as Barland and Raskin do, were correct 99% of the time. Raskin has presented these findings as if they constitute a valid and independent study of polygraph validity (Raskin and Podlesny, 1979), but plainly they do not. These 16 charts were a subset of the larger study in which Raskin scored more than half of the innocent suspects erroneously as deceptive. However, these 16 charts selected for rescoring were ones on which Raskin had made no errors at all! Since numerical scoring can be an objective and reliable procedure, it is not at all surprising that other examiners, employing this procedure, should agree with Raskin's scoring. The fact that they did, however, cannot be taken as evidence that, in the general run of unselected cases, Raskin or they will tend to be correct in their diagnoses 99% or 90% of the time. We have already observed Raskin at his best in the larger study, funded by the U.S. Department of Justice and conducted as Barland's doctoral research; averaging his results on the guilty and the innocent, Raskin achieved 72% accuracy, clearly better than the chance expectancy of 50%, but certainly not high enough to determine who will go to jail and who will be set free.

The third credible study was reported in 1982 by Kleinmuntz and Szucko (1982); it is particularly valuable because of the further light it sheds on the reports of the Reid group mentioned above. These investigators were able to obtain charts on 100 verified cases from the files of that same Reid organization, 50 verified as deceptive by the confession of the person tested and 50 verified as truthful by the confession of other persons. These 100 charts were independently rescored by three Reid polygraphers. The average accuracy achieved was 73% (about equal to Raskin's results), while 39% of the innocent suspects were mistakenly classified as deceptive. Thus, we see that when charts from the Reid files are selected for rescoring by one of

Reid's polygraphers the "accuracy" achieved tends to be high, but when a larger number of charts from those same files are selected by an independent investigator, and without regard to whether the guilty charts look deceptive or the innocent charts should be scored as truthful, then the accuracies achieved are very similar to those obtained by Horvath and by Barland and Raskin.

We can summarize the available evidence as follows: When scored without knowledge of the case facts or clues based on the suspect's behavior or demeanor, the modern polygraph test can be expected to be wrong about one-third of the time. The polygraph test is strongly biased against the innocent person; truthful suspects failed the polygraph 39%, 49%, and 55% of the time in the three investigations.

WHAT KIND OF TRUTHFUL PERSON FAILS THE LIE DETECTOR?

A study reported in 1979 found that poorly socialized individuals are more likely to pass polygraph tests, whether truthful or deceptive, while highly socialized people, with clear moral standards and well-developed consciences, tend to fail the lie detector even though truthful (Waid et al., 1979). Over the past ten years I have been contacted by hundreds of victims of invalid lie detector tests and have formed the impression that many of these people were made vulnerable by their own good character. One of the first I heard about was a young accountant who had failed two of three polygraph tests administered in connection with a theft at the bank where he had worked for six years and who then was discharged and found himself unable to find another employer. I was contacted by the pastor of the fundamentalist church that this young man had attended since boyhood, where he taught Sunday school and coached the baseball team, and to which he had regularly contributed a tithe of his earnings. Many other victims who have written or called me since then also have been deeply religious people; others had strong personal standards based no less staunchly upon secular grounds. Graduates of West Point, with its traditions and its honor code, seem particularly vulnerable.

There is nothing surprising in this. A preacher is likely to be more distressed than a felon would be to be accused of theft. Ask a West

Point alumnus if he has betrayed an official secret and you may find that his heart beats harder and his palms sweat more than those of a psychopath asked the same question. The irony is that by basing more and more important social decisions on the results of polygraph tests we may be producing an effect opposite to that intended, firing the most honorable police officers, refusing to hire the potentially most reliable employees, putting highly socialized citizens into unemployment lines or even prison, while staffing our security agencies with the undersocialized — for instance, such people as the CIA's notorious Edwin Wilson — or with those clever enough to know how to beat the polygraph.

CAN THE LIE DETECTOR BE BEATEN?

John Reid, the inventor of the control-question test, published a report in 1945 acknowledging that one can produce synthetic responses on the polygraph by a process of covert self-stimulation. undetectable by the examiner. Since one "passes" a control-question test by showing stronger reactions to the controls than to the relevant questions, Reid recognized that a clever subject might beat the lie detector by covertly augmenting his or her spontaneous reactions to the control questions. The methods of self-stimulation that Reid worked with included pressing down with one's free arm against the arm of the chair or tensing the muscles of the legs, and he suggested using a "wiggle seat" especially equipped with sensors to detect such countermeasures. But no one actually uses Reid's special chair and, in any case, it provides no protection against the subject who self-stimulates by biting his or her tongue or lip or by hiding a nail in his or her sock and pressing on it after each control question.

An experiment to test whether these methods work in real life would be difficult to implement. An academic researcher who undertakes to train guilty felons to beat the lie detector might risk criminal charges. Fortunately, one such study was accomplished by an investigator who thought at the time that he had nothing more to lose. Floyd Fay was arrested one March morning in 1978 on a charge of murder. The manager of a take-out store had been shot the night before by a robber wearing a ski mask. Before dying, the victim told the police that his assailant had resembled his friend, "Buzz" Fay. Fay, a construction worker with no prior criminal record, languished in jail for two months while police searched fruitlessly for evidence to tie him to the crime. At last the prosecution offered Fay a deal; if he could pass a polygraph test the charges would be dropped. He was required to stipulate, however, that if he failed the test the results could be used in evidence against him. Fay, whom we know now to have been innocent, agreed to this proposition, submitted to a lie detector test administered by Ohio's Bureau of Criminal Investigation, and failed the test. He was then taken to Dearborn, Michigan, to be tested again by a polygraph firm run by Lynn Marcy, subsequently president of the American Polygraph Association. Fay failed again. Hearing this evidence, a jury convicted Fay of aggravated murder, a crime punishable by death in Ohio until shortly before Fay went to trial, and he was sentenced to life in prison. In 1980 a young public defender named Adrian Cimerman took over Fay's request from prison for a review of his case. Acting on a tip, Cimerman uncovered evidence pointing to the real killers, who were duly apprehended and who confessed, exonerating Fay (Cimerman, 1981).

During the more than two years that Fay served of his life sentence, he found himself in a prison where polygraph testing was used to adjudicate charges against inmates of violations of prison rules, drug smuggling and the like. Fay had developed a lively interest in the polygraph, which he had trusted but which had landed him in prison, and wrote to experts around the country for information. In an article of mine he found a discussion of how one might beat the lie detector and he determined to conduct his own experiment. In December of 1979 I received a letter from Fay saying that he had contacted nine inmates scheduled to take polygraph tests, all of whom admitted to him that they were guilty of the offense charged. Fay explained to them how to recognize the control questions and how to augment their responses to these questions by biting their tongues. He reported that all nine of them had managed to pass their polygraph tests. Flushed with success, Fay then decided to try out a different technique that seemed promising to him. The next three inmates were instructed to answer the relevant questions "No" out loud but "Yes" silently and repeatedly in their minds. What he did not realize at the time is that it is the question, rather than the answer, that is the main emotional stimulus and such mental gymnastics probably augmented the relevant response rather than making it smaller as he had hoped. All three of these unlucky inmates failed their lie tests. Fay thereupon reverted to self-stimulation during the control questions. By the time of his release from prison, Fay had coached 27 guilty inmates in how to beat the lie detector and 23 of the 27 were successful.

POLYGRAPHS IN THE PENTAGON

A principle that I modestly refer to as Lykken's Law, a hybrid of Gresham's and Murphy's laws and the Peter Principle, asserts that in any complex decision-making situation a datum or piece of evidence that is simple and definite in its implications will tend to be given more weight than it deserves. That is one reason juries in criminal cases should not be told whether the defendant passed or failed a lie detector test. Even if warned by the judge that polygraph tests tend to be wrong about a third of the time, a jury confronted by a welter of ambiguous and conflicting evidence may be too ready to grasp at the lie test result that so clearly tells them what to do. Because of this principle, I worry about the way in which the American military and intelligence communities rely on the polygraph in hiring spies and in deciding who can be trusted with top secret clearances. The results of psychological test batteries are complex and inconclusive. Good background investigations are expensive, time consuming, and not always definitive either. If the candidate failed the polygraph, why take a chance on him or her? If he or she passed the polygraph, on the other hand, since we know the test is biased against the innocent person, should we not therefore tend to trust at least those tests that are passed? Other kinds of evidence just sit there, waiting to be painfully weighed and interpreted; the polygraph results need no interpretation — it tells us at once what decision to make.

For this reason (combined with a lack of knowledge of the real perils of trusting the polygraph) official Washington is becoming a kind of happy hunting ground for polygraph examiners. I know a young attorney who has a master's degree in Oriental studies and is fluent in Chinese who applied for a position with the National Security Administration. Although he has a rare and valuable combination of talents and is a patriotic citizen with an unblemished record, he "failed" the polygraph test and was rejected. I know three graduates of West Point, men in whom hundreds of thousands of taxpayer dollars have been invested in preparing them for important positions in the military establishment, whose careers were blighted or terminated because some graduate of an eight-week course in polygraphy decided that they were deceptive on a polygraph test. Some of the individual stories have a truly Kafkaesque quality. Here you are working at the Pentagon, an unsullied record of ten years' outstanding service behind you, being strapped in for a lie detector test. "Just a routine screen before your next promotion, Major. If you've been a good boy you have nothing to worry about." But your heart thuds a little harder when they ask you, "Have you in the last year had any contact with agents of a foreign intelligence agency?" Now, suddenly, you are on the defensive; it is up to you to prove that the test is mistaken, that you are not a traitor. "What I'd suggest, Major, is that you search your mind for anything you've thought or done in recent years that might be causing these reactions, anything at all that you're ashamed of. A kind of mental cleansing. You tell me about these things before the next examination and maybe we'll be able to get a clean record." The worst possible interpretation is likely to be put on anything you may come up with in this forced confessional. On the other hand, if you just insist the test is wrong and stand on your rights, you may find that you have no rights. Remember what President Reagan has said about "adverse consequences."

While the West Pointers and the China scholars are being weeded out of the secret sanctums, the KGB — if they are as clever as they are made out to be — will be training agents how to beat the polygraph. For all we know, they may be using an appearance on F. Lee Bailey's *Lie Detector* program as a sort of graduation exercise.

NOTES

1. I know of specific instances in Florida, Maryland, Michigan, Texas, Washington, and Wyoming.

2. Appellate or supreme courts of the following states have ruled polygraph evidence inadmissible under any circumstances: Alaska, Colorado, Hawaii, Illinois, Kentucky, Maine, Maryland, Michigan, Mississippi, Missouri, Montana, Nebraska, New Hampshire, North Carolina, Oklahoma, South Dakota, Texas, Virginia, West Virginia, and Wisconsin. High courts of fourteen states have ruled that polygraph tests can be admitted under prior stipulation of the parties, namely, Arizona, California, Delaware, Georgia, Indiana, Iowa, Kansas, Massachusetts, Nevada, North Dakota, Ohio, Oregon, Washington, and Wyoming. In other jurisdictions admissibility is determined by local tradition — case law — and varies from never, as in Minnesota, to commonplace, as in Florida.

3. The U.S. Army school and the Reid College for the Detection of Deception require six months of instruction, but the typical curriculum lasts only six to eight weeks. The usual barber college curriculum, by way of contrast, lasts from nine to twelve months.

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Mr. MARTINEZ. Mr. Barefoot.

Mr. BAREFOOT. Mr. Chairman, and Members of the Subcommittee on Employment Opportunities, my name is J. Kirk Barefoot. I am a past president of the American Polygraph Association. I am appearing before you today as the chief spokesman for the association. Seated behind me here are Mr. Charles Marino, general counsel for the American Polygraph Association, and Dr. Frank Horvath of Michigan State University.

And if I might digress for just a second from my prepared remarks, we have a paper by Dr. Horvath that we would like to submit. It goes to this preemployment issue, and we would like to submit that to the Committee as a part of the record, if we may.

Mr. MARTINEZ. With no objection, so ordered.

Mr. BAREFOOT. Thank you.

We appreciate the opportunity to appear before your Committee in opposition to H.R. 1524 and in support of H.R. 1792.

It is rather obvious that H.R. 1524, which would adversely impact on companies using the polygraph for screening prospective employees, has been brought about by the report of the Office of Technical Assessment of the Congress of the United States, which was dated 1983.

I feel that we must point out that the OTA report, although it is generally supportive of some types of polygraph testing, is, nevertheless, faulty in some of its methodology. Not only does the American Polygraph Association challenge the methodology of the OTA study, but others outside the polygraph field have criticized this as well. One of these, Dr. Laurence Cranberg, of the organization Accuracy in Academia, has clearly made known his views to Prof.

Edward S. Katkin, chairman of the polygraph advisory panel for the study. Dr. Cranberg has characterized the procedures as highly informal and has called for a restudy of the whole polygraph issue. His letter to Professor Katkin is made an attachment to these remarks.

Mr. Chairman, and Members of the Committee, the American Polygraph Association believes that the utility of such examination has clearly been shown in a document prepared by the Department of Defense in 1984, entitled "The Accuracy and Utility of Polygraph Testing." I would respectfully request that your Committee allow this document to be made part of the record of these hearings. A copy of this report has been submitted, or is being submitted along with these remarks. Mr. Marino I believe has one with him.

For years, the U.S. Government has relied on background investigations to effect top security clearance for sensitive Government positions. The Department of Defense report to which I have reference clearly shows that polygraph screening examinations are far superior to background investigations conducted by the most expert investigators when placed side by side.

As I have stated earlier, H.R. 1524 would adversely impact on hundreds of thousands of companies across the United States which depend on polygraph screening to maintain acceptable profit margins so that they may remain in business. If polygraph screening were to be denied to these companies, many of them would eventually be forced out of business due to the higher theft rates by employees. Those which would not be forced out of business would simply have to raise the price of their products, which would impact on all of us as consumers.

Even today, most retail stores budget for a certain level of internal theft in the pricing of their goods. Without polygraph screening, this internal theft would increase and, in turn, the cost of the goods would have to rise to the consumer in order for the merchant to maintain an acceptable profit margin. This could easily be referred to as a "theft" tax. The American Retail Federation, which is composed of 50 State and 30 national associations and having a collective membership operating in excess of 1 million stores in the United States, estimates that more than 40 percent of inventory shrinkage is due to employee theft. This amounts to over $10 billion per year.

For some reason, the media and polygraph opponents wish to hold polygraph examiners' opinions to an unrealistic high standard of accuracy, while they readily accept a far lower standard for physicians, psychologists, attorneys and counselors.

The committee should keep in mind that all companies have different security standards for different types of jobs. What is acceptable in one industry may not be acceptable in another industry. The Committee should also keep in mind that approximately 90 percent of persons who may be rejected for a particular job as a result of the polygraph interview are rejected because of admissions which they make prior to any test being given. Most of these admissions are concerned with undetected theft from former employers, unsolved criminal offenses of felony nature, and drug usage on the job or dealing in drugs while working. In this context, I believe that the Committee may hear testimony that the Drug Enforcement Administration estimates that 1 million drug dosage units are stolen by employees each year.

The American Polygraph Association takes the position that no personnel screening examination should intrude into the area of race, religion, politics, union activity, or economic status or any other highly personal area which is not related to the job itself.

House bill 1972, sponsored by Representative Butler Derrick, has been assigned to the Judiciary Committee. This will eliminate any abuses which may exist but retain the benefits of polygraph examinations to business and the American consumer. This bill also protects the privacy rights of employees and job applicants, while permitting employers to protect their businesses and control losses attributable to employee theft. We ask your support to this sensible approach to whatever problem may exist.

Thank you.

Mr. MARTINEZ. Thank you, Mr. Barefoot.

[Prepared statement of J. Kirk Barefoot with supporting documents follow:]

PREPARED STATEMENT OF J. KIRK BAREFOOT, PAST PRESIDENT, AMERICAN POLYGRAPH ASSOCIATION

Mr. Chairman and Members of the Subcommittee on Employment Opportunities. My name is J. Kirk Barefoot. I am a Past President of the American Polygraph Association and am appearing before you today as the chief spokesman for the Association. Seated with me is Mr. Charles Marino, General Counsel for the APA, and Dr. Frank Horvath of the Michigan State University. We appreciate the opportunity to appear before your Committee in opposition to H.R. 1524 (and support of H.R. 1792).

It is rather obvious that H.R. 1524, which would adversely impact on companies using the polygraph for screening prospective employees, has been brought about by the report of the Office of Technical Assessment of the Congress of the United States, which was dated 1983.

I feel that we must point out that the OTA report although it is generally supportive of some types of polygraph testing, is, nevertheless, faulty in some of its methodology. In particular, the tendency of the researchers to classify inconclusive examinations as errors greatly distorts the conclusions which were drawn. In treating inconclusive tests as errors, the rsearchers stray from the real world, as this is never done by the polygraph profession or, to my knowledge, by employers. An inconclusive test can only be considered as the equivalent of a test's not being given, and no conclusion can be drawn from it. Most inconclusive tests simply signal the need for appointment for an additional examination. To draw any other conclusion is faulty. If that error by the researchers had not been made, then the results of the OTA study would have been dramatically higher in favor of polygraph.

Not only does the American Polygraph Association challenge the methodology of the OTA study, but others outside the polygraph field have criticized this as well.

One of these, Dr. Laurence Cranberg, of the organization Accuracy in Academia, has clearly made known his views to professor Edward S. Katkin, chairman of the polygraph Advisory Panel for the study. Dr. Cranberg has characterized the procedures as highly informal and has called for a re-study of the whole polygraph issue. His letter to Professor Katkin is made an attachment to these remarks.

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There is a tendency, especially in the media, to think of the polygraph examination as one being performed by an instrument that makes an obsolute decision. Nothing could be further from the truth. The instrument makes no decisions and is nothing more than a diagnostic tool. No bells ring, no lights light, and there is nothing that can be compared to a computer which gives a definitive answer based on the input which is fed into it. In our situation, it is the polygraph examiner himself who, using the instrument as an aid, must make a decision as to truthfulness or falsehood. In the context of screening examinations, the examiner should be thought of as a personnel or interviewing specialist, who simply uses a polygraph to assist him in making decisions. Without the polygraph, he would still make those decisions, but they simply would not be as reliable and valid as they are with the instrument. For some reason, the media and polygraph opponents wish to hold polygraph examiners' opinions to an unrealistic high standard of accuracy while they readily accept a far lower standard for physicians, pyschologists, attorneys, and counselors.

The Committee should keep in mind that all companies have different security standards for different types of jobs. What is acceptable in one industry may not be acceptable in another industry. The Committee should also keep in mind that approximately 90 percent of persons who may be rejected for a particular job as a result of the polygraph interview, are rejected because of admissions which they make prior to any test being given. Most of these admissions are concerned with undetected theft from former employers, unsolved criminal offenses of felony nature, and drug usage on the job or dealing in drugs while working. In this context, I believe that the Committee will hear testimony that the Drug Enforcement Administration estimates that one million drug dosage units are stolen by employees each year.

The American Polygraph Association takes the position that no personnel screening examination should intrude into the area of race, religion, politics, union activity, or economic status, or any other highly personal area which is not related to the job itself.

The real bottom line on all of this is how the American public itself feels about the test. In survey after survey, persons who had taken the test in connection with a job application, gave it a favorable rating.

One recent report [1] presented the results of five different studies which included the following questions and the answer range from study to study:

(1) Do you think the test was unfair in any way? 87 to 98 percent answered "NO"

(2) Did the test or any part of it offend you? 87 to 98 percent answered "NO"

(3) Do you think the test was an invasion of your privacy? 77 to 98 percent answered "NO"

Clearly then Polygraph screening is no problem for the majority of hundreds of thousands of persons who take these tests. It is only a problem for a certain few who feel they know what is best for the American public.

In seeking to eliminate use of the polygraph in personnel screening, our opponents have consistently failed to even sugest a viable alternative to American businesses. Perhaps they are unaware of how American business uses and feels about the polygraph.

In one informal survey made by a major polygraph company of 1,200 employers (its clients) the following was developed from a 35 percent return:

58 percent have used polygraph for more than five years.

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[1] "The Polygraph Passes the Test," Richard J. Phannenstill, Security Management Magazine. August 1983.

70 percent reported polygraph reduced employee theft by at least 10 percent.

33 percent reported polygraph reduced employee theft by 50 percent.

80 percent reported polygraph provided better quality employees.

90 percent used polygraph in the investigation of specific incidents.

80 percent discontinue investigations if the employee is found to be telling the truth.

72.5 percent reported polygraph to be significantly helpful in over half of all investigations.

80 percent of companies reported they felt the most significant benefit was to clear suspicion from employees who were not involved in a specific incident.

House Bill 1792 sponsored by Representative Butler Derrick has been assigned to the Judiciary Committee. This will eliminate any abuses which may exist but retain the benefits of polygraph examinations to business and the American consumer. This bill also protects the privacy rights of employees and job applicants, while permitting employers to protect their businesses and control losses attributable to employee theft. We ask your support to this sensible approach to whatever problem may exist.

ACCURACY IN ACADEMIA,
Bethesda, MD, October 22, 1984.

Prof. EDWARD S. KATKIN,
Chairman, Polygraph Advisory Panel, Department of Psychology, State University of New York at Buffalo, Buffalo, NY.

DEAR PROF. KATKIN, Please excuse the belatedness of this reply to your letter of Sept. 14, 1984, but I have been out of the country.

By way of response to your comments, I enclose copies of two letters—both, by coincidence, dated Oct. 24, 1983. One is from Prof. Horvath to Dr. Gibbons, and one is from me to Congressman Brooks. Both relate to the OTA study. I also have in my possession a copy of the reply of Dr. Gibbons, which I regret to say does nothing to allay the concerns I have expressed to you, and I doubt that there was much reassurance in it for Prof. Horvath.

I do not doubt that, as you say, the Panel had notable experts on both sides of the issues of polygraph validity and usefulness. But in arriving at a final report, the quality of the findings is critically dependent on the soundness of the procedures by which those with differing views had an opportunity to contribute to the final record. Judging by your letter of Sept. 14, those proceudres were highly "informal"—a term which often covers serious sins of omission and commission, and I feel confirmed in my own judgment that a re-study is warranted.

It is true as you say that I am not expert in polygraphy. But those who know Dr. Gibbons and myself would not, I believe, place me below him as an analyst or critic of scientific work. And in my judgment, his satisfaction with the report of the Panel is not warranted, but rather a re-study is indicated, and I hope that you will recommend the same to Congessman Brooks.

Sincerely yours,

LAWRENCE CRANBERG.

Encls.

[Reprinted from: Polygraph, 1984, 13, (3), 246-250.]

DETECTION OF DECEPTION IN 1984: IN DEFENSE OF PREEMPLOYMENT POLYGRAPH TESTING [1]

(By Frank Horvath, Michigan State University)

Among the uses to which polygraph testing is put none is more controversial than that which involves the screening of job applicants. That testing—so called preemployment lie detection—is now of such concern that it has been prohibited in some jurisdictions; in others, including the U.S. Congress, there have been serious attempts in recent years at similar prohibitions. The question before us then is this: Are such prohibitions justified as a matter of public policy? In my judgement they are not. I propose today, therefore, to lay out support for my position. In order to do so I shall consider, and respond to, the major points raised by those on the other side of the issue. Before I do that, however, I wish to emphasize that my comments are restricted solely to the use of the polygraph for preemployment screening and do not necessarily pertain to any other uses. With that caveat in mind let me turn to the objections made to polygraph testing.

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[1] This paper was prepared by Dr. Horvath for presentation to the American Association for the Advancement of Science, New York, May 29, 1984. Dr. Horvath is the Director of the APA's Research Center in the School of Criminal Justice, Michigan State University, East Lansing, Michigan 48824.

Perhaps the most common objection to (preemployment) polygraph testing is that its validity (accuracy) is said not to be sufficient to justify its use. This issue, of course, is one which is amenable to the methods of empirical science and, it is, in fact, the one that has been the focus of the opponents within the scientific community. In the most recent government supported project to assess the validity of polygraph testing it was reported that, and I quote here, "the available research evidence does not establish the scientific validity of the polygraph as a screening tool" (Office of Technology Assessment, 1983). This statement, now often cited in opposition to polygraph testing, is a quite misleading one. It implies the existence of nonsupportive empirical research when, in fact, the actual case is—as was documented in the same report—that the research base is almost entirely nonexistent. In short, in this report the absence of evidence became evidence of absence. That problem aside, however, let it be agreed that the accuracy of polygraph-based decisions in preemployment screening is not documented and that there is a clear need for reliable research on that issue.

Accepting that statement as a starting point I wish now to enumerate some of the reasons why the issue of validity (accuracy), relative to other concerns, is not the critical and pressing one in this controversy. First, if it were indeed possible to demonstrate that polygraph testing were 100% accurate in detecting lies or verifying truthfulness there would still be good reason to ask whether such testing ought to be used. And, of course, if the accuracy were less than perfect, as is likely, there may still be good reason to use such testing. Second, the accuracy issue is often used by critics to show the negative effects (of polygraph testing) on persons who fail such tests and who consequently are not able to be gainfully employed in a particular situation. To say that polygraph testing is objectionable merely because it is a fallible procedure and may, therefore, have negative consequences, is a specious argument. How accurate does such a procedure have to be to be justified and in what situations? If it could be shown that the accuracy of polygraph testing is greater than that obtained by the best personnel interviewers, or by standard aptitude and personality tests would that quiet the critics? I think the answer to such questions is, and ought to be, no. Third, critics almost always focus on only one type of error in their concerns—the false positive outcome, a person whose chance of employment is jeopardized by a polygraph test result that indicates the withholding of information when it should have indicated otherwise. This issue, however, is not as simple and straightforward as the critics make it appear. In actuality only a small proportion of persons who take polygraph tests fail to obtain employment because of an unfavorable test result. The reason for this is that, contrary to common assumption, there are more than two outcomes to be considered in these situations. Persons who take such tests are evaluated not only on the outcome of a polygraph result but also, and more important, in terms of what might be called their "risk potential" in particular employment situations. Thus, in the simplest instance we have a 2 x 2 matrix in which each cell pertains to the joint distribution of a "risk" factor and a test outcome. It is possible, for instance, for one to be shown to be truthful (that is, not withholding information) during a polygraph examination and yet to be considered unworthy of employment of a certain type. For instance, a person who is found to be truthful in denying the commission of not more than six recent, undetected felonies would in spite of that truthfulness, be unlikely to be considered a good candidate for police work. Similarly, a person who is shown via polygraph testing to be untruthful in the denial of involvement in the personal use of marijuana is not likely to be rejected on that ground if other persons being considered for the same position are, relatively speaking, more unacceptable to the employer. In other words, it is seldom the case that a person is rejected for employment merely because of a polygraph test that showed that information was being withheld. Likewise, a test result that does not indicate the withholding of information is not a guarantee of employment.

As can be seen, it is quite misleading to consider the effect of polygraph testing on employment opportunities without recognizing that test outcomes per se are not simply and directly related to employment decisions. In fact, according to available data about 70% of all persons who take such tests both pass the test and meet the "risk threshold" as established by the employer; of the remaining 30% something less than ⅓ of them fail to gain employment because of a negative polygraph result. Most persons rejected for employment are rejected not because of their untruthfulness (as indicated by the polygraph test) but rather because of their statements demonstrating to their potential employer their basic unsuitability for particular employment—a narcotics user who is rejected from employment in a drug warehouse, an embezzler who is rejected as a bank teller, an operative of a foreign government who is rejected for work involving national security matters, and so forth.

The fact that it is the information developed and not the polygraph outcome per se leads most often to rejection, of course, raises other issues about polygraph testing. These I will discuss briefly at a later point; I note here, however, that these other issues involve matters which neither science nor scientists are any more equipped to resolve than other groups in society.

A second frequent criticism of polygraph tests is that they are administered under duress; that is, that the consent to take one if not freely given in that a refusal to do so will lead to the loss of an employment opportunity. Put in that way, of course, anything an employer requires of an applicant is not freely consented to—from providing basic personal information to the taking of standardized psychometric tests. Thus, the apparent attraction of this argument is in the abstract; in the concrete, it is less vigorous and vital. The consent argument assumes not only that every person has a right to employment, a point on which we might agree, but also that every person has a right to a particular type of employment. We require persons to consent to psychological evaluations of the most intimate nature to become police officers, to consent to medical examinations to work in physically strenuous situations, and so forth. In other words, it must be acknowleged that employment is not a unilateral action. It is, in fact, a contractual agreement, the terms of which are presumably of mutual benefit to both the employer and the applicant. While there are some issues that cannot be part of such a contractual arrangement, certainly no one would seriously argue that the terms of such contracts ought to be decided solely by the applicant. "Consent" then may well be a requirement which an applicant can either give or not but the latter not with impunity. An applicant has a right to refuse a polygraph test, to refuse to reveal academic background and qualifications, and to decide not to abide by other requirements set by the employer. That does not also grant a right to particular employment in spite of those refusals. (Bear in mind I refer only to applicants for employment, not to employees.)

The real issue here is this: Does an employer have the right to set reasonable requirements before hiring employees? Assuming that most persons would answer that question in the affirmative, then the corollary question is: Is polygraph examination a reasonable requirement?

Critics content that polygraph tests are unreasonable because they are—regardless of their accuracy—offensive, objectionable and an invasion of privacy. Usually critics make these points in conjunction with anecdotes claimed to be representative of field practices. For instance, it is claimed that such testing is used to compel persons to dredge up the most intimate details of their personal lives. While abuses such as these are frequently reported by critics, there is seldom, if ever any substantiation given. Even if there were, however, such anecdotes, can hardly be viewed as representative of the actual situation in the field. The fact is that all of the available empirical evidence on this aspect of polygraph testing is quite contrary to what the critics contend. In the last decade there have been seven surveys of the opinions of persons who have actually taken preemployment polygraph examinations; these are carried out in various parts of the country and at different times. Averaging across these results shows that, in fact, between 85 and 95% of the persons who have experienced polygraph examinations said that their examinations were not offensive, objectionable, or an invasion of their privacy. In addition, the overwhelming majority of these persons expressed a willingness to take polygraph tests in the future should the situation require it.

Why is the empirical evidence so different from what the critics contend? The answer to this is simply that most persons (critics included) do not know what a polygraph examination is actually like. In spite of the common conception of a highly stressful, intrusive atmosphere, polygraph testing is in fact carried out in a setting quite the opposite. Examiners go to some length to ensure that examinees are comfortable, willing, and aware of what the process is and what it will involve. Thus, while it is probably true that most persons do not derive great joy from taking a polygraph examination, it does not follow—as the critics assert—that those persons are abused, or offended or that they suffer a loss of personal dignity and control.

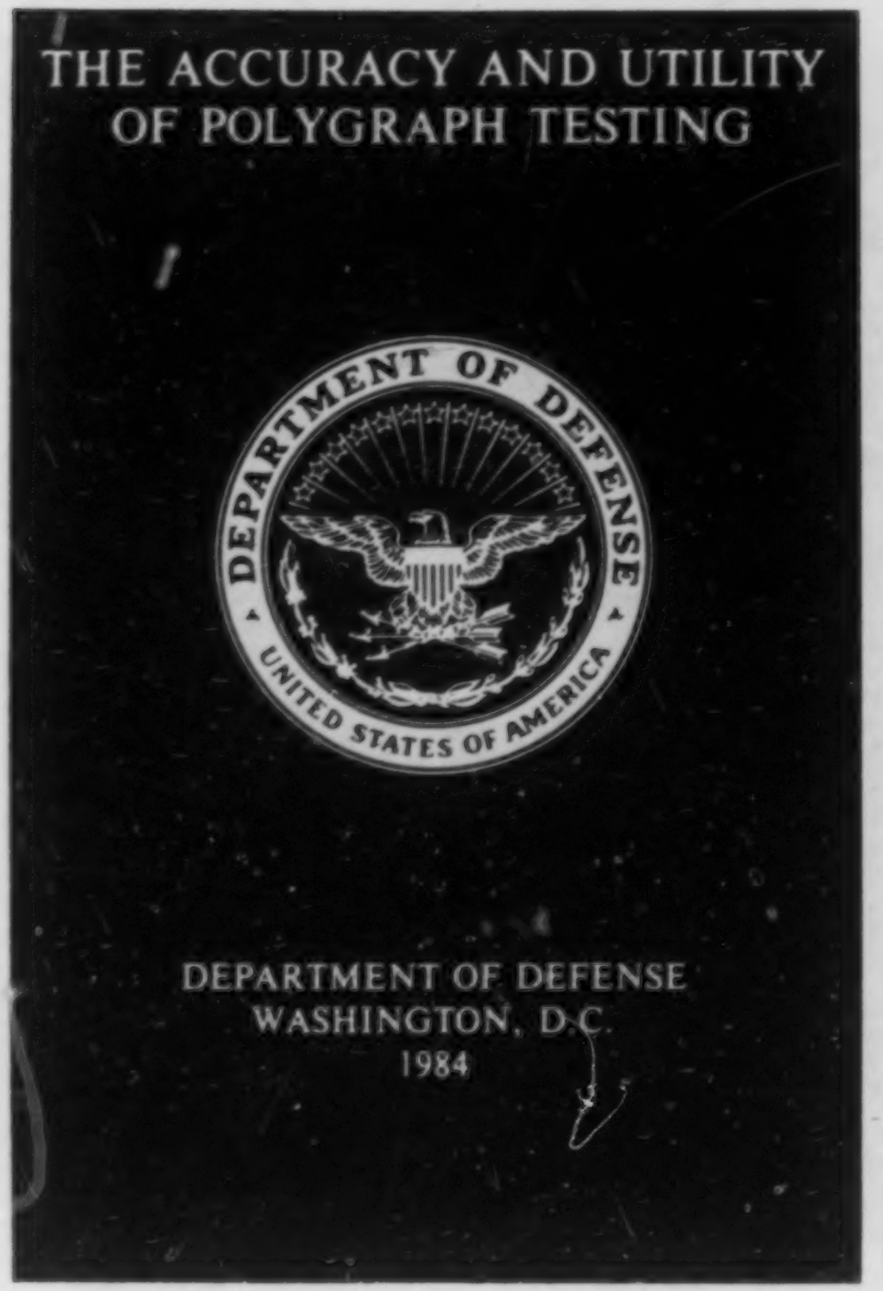
The invasion of privacy argument merits a bit more analysis. In order to examine this issue it is important to consider some of the characteristics of polygraph testing. For example, such tests require the active cooperation and participation of the examinee. The examinee must know the questions which are to be asked and how they are phrased. Most important, the examinee has personal control over what information is revealed, how it is revealed, and whether or not it is to be revealed. These are not characteristics common to what would typify most definitions of the term "invasion of privacy." Moreover, it is important to contrast those features of polygraph testing to, for instance, those which prevail in a standard background investigation or a simple check of references. In these, a job applicant has no control over what information is revealed, how it is evaluated, and indeed in most circumstances, is not even aware, or able to verify, that what was revealed was accurate information. Thus, polygraph testing—properly done—is, relative to most other devices and procedures used in the screening of job applications, far less invasive of privacy. From such a perspective the argument about invasion of privacy is not a very compelling one.

I wish now to return to consideration of the fact that it is the information obtained during the examination process and not the test result that is the salient and distinguishing feature of preemployment polygraph testing. Some persons are offended by this and contend that it is a devious way of getting people to reveal information that they would not otherwise reveal. In my judgment this issue is the most critical one in this controversy. There is little doubt that people do reveal surprisingly frank information—sometimes against self interet—during polygraph examinations. They do so partly out of concern about being detected in a lie. I believe, however, that a more important reason for these revelations is simply that polygraph examiners are very skilled at interviewing, certainly more so than are most persons who make initial personnel decisions. Whatever the reasons for this phenomenon, the crucial question is whether or not we should pemit this practice irrespective of all other concerns about polygraph testing.

There are several issues to be addressed in response to this question. First, one has to ask if the information gotten by polygraph testing can also be gotten by another means. On this point there is little doubt; all of the evidence shows that the information obtained during polygraph testing is simply not obtainable by any other means. There is, in short, no alternative method now available. Second, it is important to point out that the areas of inquiry in polygraph testing deal with items of behavior, not of attitudes, believes, or opinions. For instance, it is common during polygraph testing to ask an applicant about involvement in theft from prior employers. What is wrong with expecting people to tell the truth about such issues before they are given employment? Is there, as some of the opponents seem to suggest, an individual or civil "right" either to conceal or to lie about important information when seeking employment? Finally, if polygraph testing were used to solicit information in areas that would be objectionable if solicited by an employer without the polygraph, then its use would be questionable. Fortunately, that is clearly not the way in which polygraph testing is typically used.

Whether or not polygraph tests ought to be permitted is a political, not a scientific, question. Therefore, the problem in dealing with this issue is to steer a course that reconciles the right of individuals to be free from abusive, intrusive and unwarranted polygraph testing with the right of employers, both public and private, to use reasonable means in a fair way to select their employees. That course is clearly not the one proposed by those who advocate complete statutory prohibition. Prohibition denies that there is any legitmate interest in using (preemployment) polygraph testing and for that reason it is quite unreasoned and unacceptable. What they can be done? In my judgement, rigorous regulation of the field is necessary. Such regulation, however must go considerably beyond the mere licensure of those who administer polygraph examinations. It must make both polygraph examiners and employers who use their services accountable for their actions. There should be restrictions on both the nature and scope of areas of inquiry which are permissible during polygraph examinations. In addition, it should be mandatory for all examinees to be told in advance (by both the employer and the examiner) what is and what is not permissible practice and what course of action is available in the event of significant departures. All examinees should be entitled to know the outcome of their polygraph examination and what information about the examination is shared with the (potential) employer. Finally, all of the information developed during a polygraph examination should be strictly controlled; neither an examiner nor an employer should be permitted to use or share such information without the knowledge of the examinee.

I am confident that regulation fashioned along these lines will minimize abuses and yet provide adequate protection of the competing interets. It is time to acknowledge that like many other things in this world, the good or harm done by polygraph testing depends on how, not whether, it is used.



THE ACCURACY AND UTILITY OF POLYGRAPH TESTING

DEPARTMENT OF DEFENSE
WASHINGTON, D.C.
1984

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1984

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FOREWORD

This analysis of the scientific literature on the accuracy of the polygraph, with supporting information on use and utility, was prepared at the direction of Deputy Under Secretary of Defense Richard G. Stilwell, General, USA (Ret.). General Stilwell, with the concurrence of the Director of the National Security Agency, appointed Norman Ansley to lead a working group of senior examiners from the military services to prepare a report, setting forth the basis upon which the polygraph is utilized in the Department of Defense. In addition, the report was to include information on the use and results of polygraph testing in the Department.

The working group, listed below, provided information from their resources on the use of the polygraph and case examples. They also served as an editorial board, reviewing the text. This report was prepared by Norman Ansley, Chief, Polygraph Division, Office of Security, National Security Agency, and Marcia Garwood. Ph.D., Research and Special Branch, Polygraph Division, Office of Security, National Security Agency. Gordon H. Barland, Ph.D., served as a scientific editor of the report. William Fedor, Deputy Director (Personnel Security) Counterintelligence and Investigative Programs, and William H. Bell, Security Specialist, Counterintelligence and Investigative Programs Directorate, ODUSD (P), represented DoD in the development of this report.

THE WORKING GROUP

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Headquarters, Naval Investigative Service

James F. Hardy
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Headquarters, USAF Office of Special Investigation

OVERVIEW

The federal government has over sixty-five years of experience with polygraph techniques in criminal and counterintelligence testing. Beginning in 1951, the Department of Defense established a polygraph school for the training of military examiners. It conducts basic and advanced courses and now trains almost all of the polygraph examiners in the federal service.

The use of the polygraph for the investigation of crimes is a well established practice. Known errors in the field use are exceedingly rare. Where examinees are found to be deceptive during testing, the confession rate is consistently high, despite the fact that all of these criminal suspects had already been interrogated by an experienced investigator. Moreover, there is nothing about the polygraph technique that likely to cause a false confession because of the requisite low key questioning. The use of the polygraph to confirm admissions and confessions with additional testing also reduces the possibility of false confessions. This study includes a number of representative cases of criminal investigations in which the polygraph has played a significant role.

The polygraph is extremely useful in intelligence and counterintelligence operations. There is positive evidence of the deterrent effect of screening examinations. Examples of espionage and attempted espionage cases detected by polygraph examinations are included in this study. Without the polygraph as an investigative tool, a number of espionage cases never would have been solved. Helmich, Kampiles, and Barnett probably would not have been successfully prosecuted without the skillful application of polygraph techniques. In addition, there is definite evidence that some extremely sensitive U.S. intelligence operations would have been penetrated by hostile intelligence services if the polygraph had not been employed in screening for clearance and access. Examiners conducting screening cases have obtained confessions from applicants of their intention to commit espionage. In other cases they developed such significant admissions that penetration attempts by hostile intelligence were detected and neutralized. Screening has also kept our intelligence agencies from hiring some extremely undesirable people. Examiners, in FY 82, obtained admissions from applicants of undetected crimes involving murder, attempted murder, arson, rape, and numerous other felonies.

The polygraph field is one of those rare situations where the practice has outpaced the research. While scientists are debating how the various testing formats work, and are trying to devise a satisfactory theoretical framework, others are conducting research on the development of improved techniques and advanced instrumentation. Much of the literature which discusses the issue of polygraph validity was written for other purposes. Some of the polygraph research is very limited in scope, some is dated, and some is flawed in design. Despite these limitations the research produces results significantly above chance. Those studies which approximate field conditions by using field instruments, trained and experienced examiners, standardized techniques, and a complete field pretest interview, produce higher rates of accuracy than those conducted with one physiological channel, make-shift or novel techniques, and untrained personnel.

The polygraph is not limited to our culture. It is significant that research results are similar throughout the world, regardless of varied cultures and languages.

It is important to realize that polygraph examinations are not conducted in isolation. Their use is always in the context of a larger program. They play a role in investigations but they are never a substitute for investigation. Polygraph examiners do not make recommendations or decisions in regard to further investigation or the adjudication of the results. In screening, the polygraph examination is not used alone for clearance and access. It is an adjunct to the national agency check and background investigation. Decisions and adverse actions are not made solely on the results of an anlysis of polygraph charts. All other factors in a situation are considered before decisions are made.

Used with prudence, and a full knowledge of its limitations, the polygraph will continue to play a role in our criminal justice system and counterintelligence operations.

CHAPTER 1 - UTILIZATION OF THE POLYGRAPH

1.1 THE POLYGRAPH IN THE FEDERAL GOVERNMENT

1.1.1 FEDERAL AGENCIES

The polygraph is currently used by the Department of Defense, United States Secret Service, Federal Bureau of Investigation, Postal Inspection Service, Alcohol, Tobacco and Firearms Administration, Drug Enforcement Administration, Central Intelligence Agency, United States Marshals, United States Customs Service, and the Department of Labor (Anti-Racketeering). These agencies often provide polygraph service to those federal law enforcement agencies and intelligence agencies and activities which do not have polygraph examiners. The Department of Defense elements which currently have polygraph programs are the United States Army Criminal Investigation Command, the United States Army Intelligence and Security Command, the Naval Investigative Service, the Air Force Office of Special Investigations, the U.S. Marine Corps Criminal Investigation Division, and the National Security Agency.

These fifteen agencies are represented on the Federal Interagency Polygraph Committee which meets quarterly, or more often if necessary. Although informal, the committee has achieved the adoption of minimum standards for the selection and training of federal examiners. The Committee has also established and operated an advanced polygraph seminar. Each year, the FBI hosts a one-week seminar attended by seventy or more federal examiners at its training facility at Quantico, Virginia. The program of instruction is planned and coordinated by a different federal agency each year, although in some years two agencies combine to put on the instruction.

1.1.2 Polygraph Examiners in the Department of Defense

All polygraph examiners in the Department of Defense must meet the minimum requirements set forth in DoD regulation 5210.48 plus those established in each service or agency. DoD examiners are college graduates, experienced investigators, U. S. citizens, at least 25 years old, and specifically selected for their maturity and judgment. All have been subjected to a thorough screening examination with a polygraph, and have been the subject of an extensive background investigation. The basic polygraph training of military examiners is the twelve-week course conducted by the Army at the Military Police school, Fort McClellan, Alabama. All examiners then serve a closely supervised internship of six to twelve months.

1.1.3 Number of Examiners

As of September 1983, the Department of Defense had 153 certified examiners. That number does not include interns or those in basic training.

DoD CERTIFIED EXAMINERS

	Army CID	Army INSCOM	Navy	Air Force	Marine Corps	NSA	Total
1980	39	9	11	20	8	13	100
1981	42	9	12	20	6	30	119
1982	44	12	14	20	6	26	122
1983	50	15	15	40	6	27	153

1.1.4 Annual Polygraph Utilization

ANNUAL POLYGRAPH UTILIZATION (Number of Examinations)

	Army CID	Army INSCOM	Navy NIS	Air Force OSI	Marine Corps CID	NSA	Total
1980	4005	214	1317	1415	258	5676	12885
1981	3690	281	1185	1418	245	7418	14237
1982	3686	390	1337	2026	263	9672	17374

1.2 CRIMINAL INVESTIGATION

1.2.1 History

The Federal Bureau of Investigation and its predecessor, the Bureau of Investigation, made use of the polygraph technique occasionally from 1917 into the 1930's. In the mid-1930's Leonarde Keeler, who was then at the Northwestern University Crime Laboratory, trained an FBI agent in polygraph technique. A few years later he trained an agent from the United States Secret Service. The Army began to have agents trained as examiners in World War II, and when Leonarde Keeler established the first polygraph school in 1948 the federal government began to expand the use of the polygraph for criminal investigations. Today fifteen federal agencies or departments have polygraph programs.

1.2.2 Polygraph As An Aid To Investigation

In criminal cases, the polygraph is not used in the Federal Government as a substitute for investigation. Field investigation is usually conducted as far as circumstances permit before the polygraph plays a role. This requirement for prior investigation plus a prior and separate interview of all prospective polygraph subjects is mandatory in the Department of Defense, and may be waived by DoD officials only in the most unusual circumstances. Despite these restrictions, the polygraph is widely used in criminal investigations. Defense counsel in criminal cases frequently ask for exculpatory examinations.

The Army, which is the greatest user of the polygraph for law enforcement purposes in the Federal Government, has utilized the polygraph in 17% to 19% of its investigation of felony crimes during the last year and a half. Further, the Army has used the polygraph in 95% of its criminal investigations pertaining to crimes for which the maximum penalty is 15 years or greater. The effectiveness of this effort is illustrated by comparing the percentage of felony cases solved by the Army with the national rate. The Army solved 64.7% of their felonies while the national average for the same period was only 19.5%. The use of the polygraph was one of the significant reasons for this extraordinary achievement.

The following tables depict the extent of use of polygraph examinations in criminal investigations in DoD, the pretest and post test confession rates, and the administration of exculpatory polygraph examinations which are requested by the suspect or his attorney:

1.2.3 Tables on Use in Criminal Investigation

	Army CID	Navy NIS	Air Force OSI	US Marine Corps	Totals
1980	3990	1209	1336	255	6790
1981	3677	1049	1304	240	6270
1982	3665	1210	1745	261	6881

PRETEST ADMISSIONS OR CONFESSIONS

	Army CID	Army INSCOM	Navy NIS	Air Force OSI	Marine Corps CID
1980	12.5%	21.5%	11.5%	10.0%	1.9%
1981	10.3%	16.0%	8.9%	13.3%	3.7%
1982	10.7%	13.3%	11.0%	12.0%	3.4%

POST TEST ADMISSIONS OR CONFESSIONS OF DECEPTIVE SUBJECTS

	Army CID	Army INSCOM	Navy NIS	Air Force OSI	Marine Corps CID
1980	46.4%	19.4%	34.4%	35.6%	50.0%
1981	44.7%	27.7%	36.5%	33.3%	52.4%
1982	48.7%	51.3%	30.1%	31.2%	36.7%

1.2.4 EXCULPATORY EXAMINATIONS

(Requested by the suspect or his attorney)
Percentage of total cases in parenthesis

	Army CID	Navy NIS	Air Force OSI	Marine Corps CID
1980	328 (8.2%)	239 (18.1%)	506 (35.6%)	39 (15.1%)
1981	349 (9.5%)	164 (13.8%)	466 (32.9%)	24 (9.8%)
1982	324 (8.8%)	209 (15.6%)	542 (26.8%)	31 (11.8%)

1.2.5 Criminal Investigation Case Examples

In 1980, an Army captain was killed when his parachute failed to open. Investigation revealed that the static line of the officer's parachute had been intentionally cut. As this crime occurred in an airborne division, the possibility existed that other parachutes had been cut and that additional military members would be fatally injured during parachute jumps. As 160 parachute riggers had an opportunity to commit this crime they were all considered suspects. A decision was made to use the polygraph swiftly to determine the individual responsible for sabotaging the parachute. Five days after the death of the officer, use of the polygraph resulted in the identification of the person who sabotaged the parachute, who then confessed.

In 1982, a serviceman had been scheduled for trial for the rape and sodomy of a female military member. Based on a polygraph administered to the alleged assailant, who requested this test in exculpation, it was determined that he had not committed any sexual crimes with or upon the complainant. A subsequent polygraph examination of the female complainant resulted in a confession that she had made a false complaint because she was angry at some members of her former military unit. In this instance, the polygraph prevented an innocent man from going to trial for the serious crimes of forcible rape and forcible sodomy.

In June 1982, a female military person reported in a sworn statement that a male military person had assaulted her with intent to commit rape. A criminal investigation of the alleged incident failed to confirm or deny her complaint. Subsequently, the alleged incident became a security clearance matter and was reopened. The alleged perpetrator admitted "playing around" with the complainant, but denied any aspect of assault or attempted rape and he volunteered to undergo a polygraph examination. As a result of the examination, the male military person confessed to all the charges made by the complainant.

A civilian employee operating a government owned service (gas) station on a military installation was suspected of falsely reporting a $1,800.00 robbery of the service station. HE was administered a polygraph examination which indicated deception. The employee then admitted stealing the $1,800.00 himself and identified a local military member as an accomplice.

An individual was tried and sentenced to life in prison for the murder of a fellow soldier. This individual asked the Army to give him a polygraph examination for exculpation. The results revealed that he had not committed the murder. The investigation was reopened and the actual perpetrator of this crime was apprehended and the innocent solder was released from prison. This matter would not have been resolved without the use of the polygraph.

The body of a nine-year-old girl was found in a trash dumpster on a military installation. An autopsy revealed the child had been sexually molested and the cause of death was asphyxia. Investigation revealed that an individual reported he had been robbed in the vicinity of the dumpster on the night in question. Further investigation revealed the complainant of the robbery had been in a bowling alley, which was the last place the girl was seen alive. The subject was offered a polygraph examination and he agreed. The examination results indicated deception on the issues of kidnapping and killing the girl. During the subsequent interrogation by the polygraph examiner, the subject made a full confession.

A U. S. military member was suspected of setting a fire aboard a ship that resulted in excess of one million dollars damage; he denied the charges. The military member was administered a polygraph examination which indicated deception, whereupon he confessed to intentionally setting the fire.

An individual charged with Possession and Sale of Controlled Substance maintained his innocence during the investigation and requested an exculpatory polygraph examination. The examination was administered by an Army examiner and the individual was found to be truthful when he denied criminal participation in the possession and sale of the controlled substance. The polygraph evidence was not considered during the pre-court martial hearings nor was it allowed to be introduced during the court martial proceedings. The individual was convicted and sentenced to serve time in prison. Following the conviction, the examiner continued the investigation and identified a civilian subject who confessed to the examiner that he committed the crime for which the military member was sent to prison. The examiner then coordinated efforts to obtain the release of the innocent military member from prison.

1.2.6 Criminal Conduct Revealed during Screening Examinations

A detailed analysis was made of the admissions made during the testing of 20,511 applicants for clearance and access at NSA from 1 October 1975 through 28 February 1979. There were 695 persons, 3.4% of the total, who admitted to the commission of a felony. In almost all of these cases the perpetrator had gone undetected. Among the few who had been caught, there were six who had been convicted, but who had falsified their forms to conceal the arrest, conviction, and time served. The admissions included murder, armed robbery, forcible rape, burglary, arson, embezzlement, hit and run driving with personal injury, thefts of expensive items or large amounts, smuggling and wholesale selling of illegal drugs.

In addition, 2,489 persons (12.1%) admitted to misdemeanors. These admissions included petty theft, simple assault, tax evasion, falsification of travel vouchers, malicious damage, indecent exposure, prostitution, selling illegal drugs and controlled substances for profit, deliberately writing bad checks, and other forms of fraud. Some of these cases may have been felonies. When there was doubt, they were statistically classified as misdemeanors. Not all of the misdemeanor admissions were disqualifying. The purchase, use or possession of illegal drugs was not listed in this category.

There were 8,383 (40.1%) who admitted to the use of an illegal drug on at least one occasion. There were 2,228 (10.9%) who admitted using amphetamines, barbiturates, hallucinogens and similar substances. There were 704 (3.4%) who admitted to the use of heroin, cocaine, or opium.

The statistical rates for the admissions of crimes and drugs have changed very little since that survey.

1.2.7 Examples of Crimes Admitted during Screening Examinations

The following admissions were made to NSA examiners during screening examinations. All are from FY 1982 cases:

An applicant for an engineering position at NSA, employed as an engineer by another government agency, admitted that his engineering degree was phony (he bought it through mail order from London for $100). He also admitted that he shot and wounded his second wife (his prison term was not on his SPH) and his present wife is missing under unusual circumstances that he would not explain.

An applicant admitted to setting fire to the trailer that his ex-wife and child lived in. He had been questioned by the Michigan State Police as a suspect (attempted murder/arson) but denied it, and refused their offer of a polygraph test.

An applicant said he killed a young girl while in combat in Vietnam. He recognized her as a young girl when he shot her the first time, then for no reason he could give, he shot her several more times at close range. He called it murder. He also admitted stabbing a stranger in the face with a knife in an argument over some beer.

An applicant admitted to the forcible rape of his ten year old niece, which was never reported to the police.

An applicant for a position in which he would carry a firearm, admitted he had been charged with attempted murder but not tried for lack of evidence. He admitted firing his shotgun at six people, and hitting all of them.

An applicant admitted to firing a rifle into his estranged wife's home in an attempt to murder her. He fled Connecticut which had a current warrant outstanding for his arrest.

1.3 INTELLIGENCE, COUNTERINTELLIGENCE AND SECURITY

1.3.1 History

The instrumental detection of deception was first used in an investigation for the Army when a Secret Code Book was stolen from the Surgeon General's safe in 1917. The thief was detected among the 70 suspects tested, but he was not confronted. Followed from Washington, D.C. to New York City, he was apprehended in the act of passing the code book to a German agent. During World War I the Army trained a group of psychologists at Camp Greenleaf in lie detection techniques for counterintelligence purposes, but the Armistice was signed before they were put to use (Marston 1938).

Beginning in the 1940's, the polygraph was used at the Oak Ridge atomic facility for screening of employees. Operated entirely under contract by a private company, the program continued until 1951 when the security responsibilities then under contract were taken over by the government (Trovillo 1951). At the end of World War II at Camp Wetherill, New Jersey, the Army used the polygraph to examine 274 German prisoners of war who had been screened and selected for police leadership positions in the post-war German Government. A team of seven experienced examiners using RI Technique asked questions about Nazi party sympathy, communist sympathy, plans to engage in sabotage or subversion, activity for the Gestapo, SS, or SA, and serious crmes. The results cleared 156 Germans (57%) for senior police positions. There were 8 inconclusive cases (3%) and 110 (40%) were not recommended. The examiners obtained admissions to Nazi Party membership by 24 candidates, and to SA by two and SS by one. Three were communists, of which one was a party organizer. Among the Nazis was the Party Treasurer from 1933 to 1938 (Linehan 1978).

In 1947 the newly formed Central Intelligence Agency began using the polygraph in support of operations and for specific investigations. They also began to use the polygraph in screening. By 1950, CIA was screening all applicants.

In May 1951, the Armed Forces Security Agency, predecessor of the National Security Agency, began using the polygraph to expedite the clearance processing of more than a thousand employees who had been hired but could not be cleared until the background investigation had been completed. Because of the Korean War, those investigations were taking from nine to eighteen months to complete. Accordingly, AFSA gave top secret access on an interim basis to employees based on a satisfactory polygraph examination and a National Agency check. Soon thereafter, AFSA-NSA began screening local applicants before they were hired and by 1953 was giving polygraph examinations to all applicants prior to employment.

During the years 1951 to 1983 a number of other special activities in the Department of Defense have used the polygraph for clearance and access determinations, and for operational purposes. Some of these polygraph operations were for specific projects of a limited duration, others were for long terms.

Acting on recommendations of a DoD Select Panel on Personnel Security, Frank C. Carlucci, Deputy Secretary of Defense, issued a Memorandum on 6 August 1982 which established an aperiodic counterintelligence polygraph program in the Department of Defense for those persons who have SCI access. Mr. Carlucci also restored the Reinvestigation Program in DoD. The Carlucci polygraph program was implemented only in the National Security Agency. Other elements of DOD needed a revision in the DOD polygraph regulation before they could begin. The polygraph regulation was under revision when Congress expressed an interest in the proposed expansion of the polygraph in the Department of Defense.

On March 11, 1983, the President issued National Security Decision Directive Number 84 "Safeguarding National Security Information," which was separate from the DoD action. Among the many security measures in NSDD 84 is the requirement to revise regulations and policies so that employees may be required to take a polygraph examination in the course of investigations of unauthorized disclosures of classified information.

Congress will hold additional hearings, on NSDD84 and the polygraph, and has passed legislation which prohibits The Department of Defense from expanding the use of the polygraph beyond that existing on 5 August 1982 (the day before the Carlucci Memorandum), until 15 April 1984. NSA is exempt from this moratorium. The moratorium is to provide Congress with time for hearings and, if necessary, subsequent legistative action.

1.3.2 Specific Investigations of Espionage

In many cases, espionage activity is initially detected by other means, and the role of the polygraph examination is to find the guilty persons among those suspects developed by investigation. Not infrequently, the examiner will get admissions that are useful in furthering the investigation, or get confessions. Polygraph examinations were important to the successful prosecutions of Barnett, Kampiles, and Helmich. All received lengthy sentences for violation of the espionage statutes. And in each of these cases the polygraph examination was important to counterintelligence analysis and damage assessment.

Other espionage cases have been detected through screening operations conducted by the Department of Defense and the Central Intelligence Agency. Here, again, the examiners have obtained information in sufficient detail to initiate investigations, and in some cases have obtained confessions. It is important to note that in the screening situation, the applicant initiates the contact by applying for assignment, employment, or some form of access. The applicants know beforehand that they will be given a polygraph examination. The decision to take the examination and risk exposure must be a difficult one to make. There are several known cases in which agents have refused an assignment to seek employment where the classified access required a polygraph examination. This deterrent effect is illustrated by the refusal of Christopher Boyce to accept a job with the CIA as a courier between the United States and sites in Australia. He feared that the examination would reveal his espionage activities. He refused again for the same reason on a later occasion when his Soviet handler suggested he apply for work at CIA (Lindsey 1979). Likewise, Barnett opted not to apply for a staff position at CIA or NSA because he feared the polygraph test.

Prime Minister Thatcher (1982), in her statement on the report of the Security Commission about the Prime Case, said that "The Commission concludes that the polygraph is the only measure of which it could be said with any confidence that it would have protected GCHQ from Prime's treachery, either because it would have deterred him from applying to join or would have exposed him in the course of examination. In view of this and of the extreme gravity of the damage caused by Prime, the Government accepts the Commission's recommendation that a full and thorough pilot scheme should be carried out. The Commission recognizes that a polygraph examination would be seen by some as an unwarranted invasion of their privacy. But we are dealing with matters of the highest national security, and those who have access to the nation's most sensitive secrets must expect to be subject to the most rigorous vetting procedures."

1.3.3 Examples of Polygraph Cases - Espionage

A U.S. directed informant with access to the intelligence and security functions of a foreign power reported on an unidentified agent inside a highly sensitive U.S. communication center, and said that foreign government officials were reading U.S. classified communiques almost as soon as they were put on the wire. These communiques dealt with highly sensitive activities involving the Defense and State Departments, and the White House. Investigation led to five suspects. All were interviewed with sworn statements executed denying any activity on behalf of the foreign government. Investigation produced no additional indication of espionage activity. All five suspects agreed to undergo examination on the polygraph. Four of the five were determined by the examiner to be innocent of involvement. The remaining individual was reported as deceptive and subsequently confessed that he was, in fact, in the employ of the foreign power. He admitted furnishing far more information to the foreign power than was reported by the U.S. informant. Much of the information he admitted providing to the foreign power was subsequently confirmed by the U.S. directed informant.

A U.S. military member was arrested after selling classified material to undercover federal agents following documented contact with the Soviets. The military member denied any additional contacts or any additional violations. He was administered a polygraph examination in which showed deception. He subsequently admitted to additional Soviet contacts and possession of additional classified information at his residence.

A U.S. controlled agent allowed himself to be recruited by a foreign intelligence service in 1978. From 1978 until 1982, the agent was met periodically by a foreign case officer, but never in the United States. In April 1982, the foreign intelligence service agreed to have a courier meet the agent in the United States. The courier was arrested when the meeting took place. He was tried and convicted. Throughout his interrogation following his arrest, he did not identify anyone else in the U.S. who might be engaged in espionage against the U.S. The convicted courier subsequently agreed to undergo a polygraph examination. The examination resulted in the courier furnishing the names of several persons in the U.S. known or suspected by him to be espionage agents for the foreign power he represented.

A military service received information from another agency that a military member was involved in espionage with a hostile intelligence agency. Subsequent investigation included a polygraph examination where the member admitted being involved in espionage against the United States for over a year.

A military service received information that an officer was involved in espionage. Subsequent investigation disclosed the suspect was a missile launch officer assigned to a western base. During one of his many trips he was arrested. Through his defense counsel, arrangements were made to grant immunity if the officer would disclose all compromises of classified information and pass a polygraph examination to confirm the admissions. He was then thoroughly debriefed by counterintelligence personnel and said he had told everything. However, he made many additional significant admissions to the polygraph examiner before ultimately passing the polygraph test.

A foreign civilian who was formerly employed by U.S. Forces, was reportedly providing U.S. documents to a foreign intelligence service. That individual's daughter was married to a member of the U.S. military, and she was also implicated in the espionage activity. During an investigation of these allegations, three sources of information were examined by the polygraph and were determined to be truthful. Those examination results significantly aided in the development of the investigation. The host country police arrested the foreign civilian and his daughter for espionage. The American member of the military forces was interviewed and denied any knowledge of his wife or father-in-law being involved in espionage. He agreed to undergo a polygraph examinaton. The examination resulted in the member admitting that he knew his wife and her father were involved in espionage, and that he did not report that fact, even though he knew he was required to, because he wanted to protect his wife.

1.3.4 Espionage Detected During Screening Examinations

An applicant reacted to questions about involvement in intelligence for a Foreign government, espionage activity, intent to commit espionage against the United States, the accuracy of his security forms, and other related questions. After the tests, he admitted that his forms were not correct when he listed his academic affiliation during two long tours abroad, amounting to a total of eight years. He admitted that he was, during those years, a scientific advisor to the chief of a foreign military intelligence service. Although he admitted to the examiner that he might pass classified information to that service, he claimed that he had not done so. He had a Secret U.S. clearance before, between tours, and after his work abroad for that agency. He admitted that he was still in contact with the foreign intelligence agency, and the subsequent test charts indicated consistent significant reactions to questions about giving or selling U.S. classified information to that service.

An Army Sergeant who had access to cryptologic information applied for a civilian position. During the polygraph examination, he reacted to various relevant questions. In the post-test interview, he admitted to various petty crimes and miscellaneous wrongdoing. The polygraph examiner noted continued specific reactions to relevant questions and when the Sergeant was reexamined several weeks later, the same situation continued. His access was withdrawn and an investigation opened. While that investigation was still in progress, he was found dead in his automobile. It was subsequently determined that he had been engaged in espionage on behalf of the Soviet Union.

A contractor employee seeking clearance and access reacted to polygraph questions concerning espionage. She told the examiner that her former husband was currently engaging in espionage against the United States for a foreign power. This had been going on for several years while her spouse held various positions in the government and with defense contractors requiring classified access. She gave very specific details on his espionage activities.

An applicant for employment reacted to questions about committing espionage, clandestine contacts, and related questions. He admitted that if employed, he would sell classified information to a foreign intelligence service if he could get enough money for it to live comfortably. The applicant had access to classified information while in the service. He continued to react to counterintelligence questions after his admissions.

An applicant described his various radical and Marxist connnections including residence with a British Communist Party (CP) member while they both were students at a British university. The applicant visited the Soviet Union twice, both times with British student tours. He became particularly friendly with a young woman who described herself as a student and part-time INTOURIST guide. She was his tour guide on the second trip. Applicant later wrote his tour guide telling her he had applied for employment with U.S. intelligence agencies. The Soviet tour guide came to the U.S., supposedly to visit relatives; contacted the applicant; then arranged to meet the applicant at an airport the day after his polygraph examination. He continued to react to counterintelligence questions during his polygraph testing.

An applicant said he had lived with a foreign national, who he said was an intelligence agent of a foreign power, while he was stationed in Berlin with U.S. forces. The applicant provided information about her activities including observation of a transmitter/receiver which was apparently for clandestine use. He did not report her activity to his superiors, despite the fact that she worked for U.S. military finance, because she paid for their apartment and he enjoyed living with her.

An applicant for employment who had lived abroad for several years overseas admitted that she was cultivated for several months by the host country intelligence agency and finally offered a position in which she was to travel to another country under a false identity, but as a U.S. citizen, then obtain employment in the target country (not the U.S.). She said that after two days of thoughtful deliberation, she declined. She had not previously reported this to U.S. authorities, and did so during the polygraph test only after reacting to counterintelligence questions.

An applicant who was about to retire from military service reacted to questions about intending to commit espionage against the United States. The applicant then described several visits to the Soviet Embassy to make arrangements to defect to the Soviet Union. The Soviet officials took copies of his documents, got extensive biographical information and when they learned of his pending applications for employment with U.S. intelligence agencies, encouraged him to stay in the U.S.

An applicant reacted to questions about knowing others engaging in espionage, intent on his part to engage in espionage, and to questions about the truthfulness of the information on his security forms. He admitted that he had been terminated from employment with a U.S. intelligence service after a year of training but before he was assigned to a position. After being fired he worked as a free-lance journalist in the U.S. and abroad, with an Asian partner. During their work, the Asian told him he was a professional and trained intelligence agent for his home country. Although the applicant identified the agent by name, his location in the U.S., and his intelligence service, he would not give many details of their joint activities. After these admissions, he continued to react to questions about intending to commit espionage against the United States and the accuracy of his security forms.

An applicant admitted that a Russian, who stayed at his home for several days, asked for a tour of potential military targets in New Jersey. The Russian was allegedly with a Soviet delegation from the USSR Ministry of Health. The Russian took numerous pictures while the subject drove him to all the major bridges and petroleum plants in New Jersey, and to a nuclear power plant. The following year, he allowed two Soviet citizens from the Ministry of Health to stay in his home while they made tours during the daytime. They were vague about where they had been. The applicant provided additional information about other U.S. citizens who were assisting these Soviets in their non-medical activities.

One applicant, a frequent traveler to a Communist-bloc country, told the examiner of being drugged, and while drugged, an attempt was made to get him to engage in a homosexual act. Later, he was directly asked to work for the intelligence service of that country against the United States. He said he refused, but he did not report the entrapment attempt or the offer to any U.S. official.

1.3.5 Suitability Statistics

When considering for clearance and access those persons who have not yet had the opportunity to demonstrate their loyalty and trustworthiness, it is necessary to make judgments from their general conduct. Initial clearance is also the appropriate point at which undesirable people should be barred from access to classified information.

The extent and nature of admissions to criminal activity, including drugs, made by NSA applicants, has been set forth elsewhere in this report. Some other aspects of the admissions made during screening should also be reported .

Falsification of the Statement of Personal History or Personnel Security Questionnaire is reported only when it is deliberate, and the omission or false entry is significant. Among the 20,511 applicant polygraph examinations conducted at NSA from 1 October 1974 to 28 February 1979, there were 1,573 persons who falsified their security forms. That was 7.7% of the total number of persons examined. Omissions included criminal arrests and convictions, employment where their work was unsatisfactory or they were terminated, less than honorable military service, family, subversive organizations, falsified citizenship, education levels and degrees not attained, foreign travel and numerous other matters. In many cases, but not all, an accurate record would have given information that would have been a bar to clearance and access, or to employment, or both.

Mental and nervous disorders were described by 1,306 applicants (6.4%). When appropriate, medical releases were obtained for use by those who conduct the background investigation. In addition, 297 (1.5%) admitted they had attempted suicide. Because these applicants were also interviewed at NSA by a qualified clinical psychologist, an appropriate evaluation and prognosis was possible.

There were 2,820 persons (13.8%) who disclosed close contact with foreign nationals. Of particular interest were the 857 persons (4.2%) who admitted close contact with Soviet bloc citizens, whose identities were not listed on the security forms. Many of these were contacts began with foreign language training but developed into friendships, with contacts continuing through personal meetings and correspondence.

The examination includes questions about unauthorized divulgence. There were 2,153 persons in the 1974-1979 study who had prior access to SCI level material. Of those, 126 (5.9%) divulged classified information to members of their family and 129 (6.0%) disclosed classified information to others. The admissions, always checked by a classification authority, ranged from a one-time disclosure of confidential information to a member of the family to very serious compromises of extremely sensitive operations to outsiders, including foreign nationals. There were cases where the divulgence was not only serious, but frequent, and sometimes to total strangers. There were a few cases where persons who did not have official access to classified information heard it or saw it, and knowing it was classified, passed it on to other unauthorized persons. The most flagrant case of this kind was the son of a federal official who was stationed abroad. The son had casual access to his father's office, and was able to get improper access to highly classified material in the office without others noticing. He then disclosed this information to the sons and daughters of foreign diplomats and other foreign nationals in order to impress them. The disclosures were serious, but he was never detected while doing this.

1.3.6 USE OF POLYGRAPH IN ARMY PERSONNEL SECURITY CASES

The U.S. Army has no general personnel screening program in which polygraph is utilized; however, the polygraph is utilized on a selective case-by-case basis. When the U.S. Army Central Clearance Facility (adjudications) receives a completed Background Investigation from the Defense Investigative Service in which there are areas of adverse information which remain unresolved, a polygraph examination may be requested to aid in the resolution. The polygraph examination is offered to the subject on a voluntary basis to aid in clarifying the areas not fully clarified by the investigation.

From February 1982 to September 1983, 180 such cases were referred for polygraph examination. Of the 180 cases, 67 subjects declined to take the examination. The following statistics summarize the results of those 113 cases in which the subject agreed to undergo a polygraph examination:

Overall Results

Nondeceptive	Deceptive	Inconclusive	No Opinion
28(25%)	81(72%)	2(1.5%)	2(1.5%)

Where there was Deception Indicated (DI), relevant admissions were obtained in 71 cases (or 88%). The following is a breakdown by area of the DI admissions:

Loyalty	Drugs	Sex Crimes	Other Criminal Acts
16(20%)	40(49%)	11(14%)	14(17%)

Loyalty cases involve unreported contacts with foreign intelligence, unreported travel to denied areas, unreported contacts with persons within denied areas, association with communist/subversive organizations, and hostage situations.

Drug cases involve the use, possession, distribution, purchase or sale of illegal drugs.

Sex cases involved homosexuality, child molestation, and other aberrant sexual practices.

Other criminal cases involved admissions to criminal activity other than drug involvement or sex crimes, e.g. theft, embezzlement, fraud, etc.

Clearance Actions in Polygraph Cases

	Deceptive	Nondeceptive
Clearance Granted:	15 (24%)	24 (89%)
Clearance Denied:	36 (76%)	3 (11%)

Action was still pending in 19 DI cases and 2 nondeceptive (NDI) cases. Some of the DI cases were cleared up by minor confessions.

The above figures indicate that adjudications were not based solely on polygraph results, but on the overall investigative file.

1.4 POLYGRAPH and the TRADITIONAL METHODS

The polygraph examination is part of the processing for clearance and access in NSA and CIA. Both are necessary for complete coverage. Although many agencies rely entirely on the background investigation, neither NSA nor CIA have considered authorizing SCI access without a polygraph in more than 30 years. During the Korean emergency in 1951, when resources were inadequate to conduct background investigations in a timely manner, NSA granted temporary access based on polygraph results and a National Agency Check, with full access on receipt of the background investigation.

1.4.1 1953 - Study of Polygraph/Background

In 1953, the National Security Agency conducted a study of the effectiveness of their emergency procedure of using the polygraph and National Agency Check.* That study considered 3,926 individuals who were processed for clearance and access by NSA (and its predecessor, AFSA) between 1 November 1951 through December 1952.

Of the 3,926 individuals concerned, 3,878 volunteered for a polygraph interview, and 48 refused to do so. These 3,926 individuals are further broken down into two categories: 2,902 who were interviewed prior to employment, and 1,024 who were recruited in the field and were interviewed after they were employed. Of those who refused to take a polygraph test, 41 were applicants and 7 were employees. There were 2,772 complete or partial background investigations reviewed during this study. The disparity between this figure and the total persons in the study is because, generally, when applicants revealed information during the polygraph examination which disqualified them from further consideration, no background investigation was initiated. Another contributing factor is that in the case of 64 employees and 209 applicants the reports of the complete background investigations had not yet been received by the agency at the time of the study. Of the 1,017 employees who were interviewed a total of 448 of the tests indicated no deception and the employees gave no information requiring evaluation, while 569 indicated deception, gave information requiring evaluation, or they were physically or emotionally unfit for testing.

Of the 569 employees who required further security evaluation after the polygraph interview, 83 were terminated or permitted to resign in lieu of termination. In 65 of these cases the information which formed the basis for this personnel action was furnished solely as a result of the polygraph interview. Eight persons were terminated solely on the basis of information furnished from the background investigation, and 10 persons were terminated on a composite of the information from the two investigative methods. Of the 8 people who were terminated solely as a result of their background investigations, 3 made no admissions and appeared truthful on the polygraph test, while the other 5 made minor admissions or were unfit for testing. Altogether, 8.10% of all employees in the study were terminated, 78.3% on the basis of information from the polygraph interview, 9.6% on the basis of information from the background investigation, and 12.1% from a composite of the two. In addition to the 83 persons who were terminated, 248 persons covered by this study resigned voluntarily, for reasons unrelated to security, leaving 693, or 67.67% of this group remaining with the Agency.

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*NSA does not now authorize clearances on a polygraph and an NAC because PL 88-290 requires a full field investigation prior to clearance.

The clearance of 76 employees was delayed pending receipt of background investigations. Six of these persons were later terminated on the basis of information provided by the background investigation, while in the other 70 cases no information was developed which was a bar to clearance. These persons had been held for the completion of a background investigation because they were unfit for testing, because they refused to volunteer for a polygraph test, or because the information resulting from the polygraph interview was not sufficient to enable analysts to reach a security determination.

In the case of 2,902 applicants for employment, 41 persons refused to volunteer for a polygraph interview, leaving 2,861 who were examined with the polygraph. The tests of 1,251 applicants indicated no deception and the applicants gave no information requiring security evaluation. The remainder of the group of applicants, 1,651 persons (56.9%), required further security determination. Of these, 696 (24.3%) were disapproved for clearance on the basis of their admissions during polygraph examination. The 610 (21.3%) who gave minor admissions were evaluated as satsifactory for clearance. Of those 2,902 who applied for employment, 1,765 (61%) entered on duty. Some of the remaining 345 applicants were denied employment for reasons not related to security, others declined proffered employment.

There were 19 persons who were approved for hire on the basis of the satisfactory evaluation of their polygraph interview and a National Agency Check who were later terminated. Eleven of these persons had made no admissions and appeared truthful on their polygraph interview. In 3 cases the individual made minor admissions which were evaluated satisfactorily, and 2 cases involved those who had refused to volunteer for a polygrah test, but were nonetheless hired. A composite of the information from the background investigation and the polygraph test formed the basis for the termination of 2 persons, and the remaining individual was terminated on the basis of information developed during the polygraph interview of another applicant. The 17 persons on whom derogatory information was developed despite clear polygraph test results and no admissions or only minor admissions represent a false negative error rate of 0.6% in the testing of 2,902 applicants.

The use of the polygraph interview resulted in a considerable monetary saving in the security clearance of employees. In the group under study there were 696 applicants who were disapproved for hire and 65 employees who were terminated immediately on the basis of information derived from the polygraph interview. Calculated on the basis of a nine-month clearance period at the GS-4 level, this group of individuals would have cost the government $1,814,322 in salary alone while awaiting the completion of a background investigation. This figure is low, since the average salary of individuals awaiting clearances in the agency was above the GS-4 level and the average background time was more than nine months.

The study concluded that the background investigation is at its best in areas which are a matter of record, such as employment, education, naturalization, criminal history, etc., although even in these areas more pertinent information was developed through polygraph interviews. On the other hand, in personal matters not of record, the polygraph interview is far more reliable as a producer of information for security determination. In the polygraph interview this information is obtained directly from the subject. It does not, as with the background investigation, come from informants whose motiviation and reliability are often unknown, and who, in a few cases where derogatory information is concerned, are vindictive.

The authors of the 1953 study observed that the primary justification for the use of the polygraph interview in personnel screening is not its financial savings to the government, but from the fact that a combination of a complete background investigation and polygraph interview provides more informaton for security determination than can be obtained from any other methods yet devised. Neither the polygraph interview nor the background investigation may be considered complete in itself. Each supplements the other; each improves the validity of security determinations.

1.4.2 1983 - Study of Polygraph/Background

In 1983, the National Security Agency conducted a pilot study comparing the information obtained from polygraph interviews where the examiner did not have any information from a background investigation, with background investigations where none of the polygraph developed information reached the investigators. These "dual track" cases are unusual in that the investigation started well before the polygraph examination was conducted. Even so, some of the dual track cases had to be discarded from the study because information developed during the polygraph intervew was totally disqualifying and the Defense Investigative Service was advised to stop the investigation before it was complete. Other cases were deleted from the study because information from the polygraph interview was given to DIS as leads for further investigation, because DIS had not yet closed their case.

The subjects whose files were reviewed in this study had already been evaluated as having acceptable information on their Personnel Security Questionnaires, and had received a polygraph interview sometime between 1 October 1982 and 31 January 1983. The polygraph interview and Special Background Investigation (SBI) were conducted independently, without any exchange of information. From a total of 248 randomly selected dual tracks cases, 194 cases were selected as meeting the criterion of complete independence, required by this study.

The results of the study revealed that 78% of all information used for evaluation was obtained from polygraph reports. The remaining 22% of information used for evaluation came from the Special Background Investigations.

In 113 cases (58%), the polygraph report was of particular value to the clearance adjudicator because it was the only investigative method to develop information for evaluation. By comparison, the SBI developed the only information in two cases (1%).

In addition, there were 22 cases (11%) in which the polygraph interview and the background investigation produced dissimilar but useful information, and 14 cases (7%) in which they developed similar information. There were 43 cases (22%) in which neither source produced useful information. Although polygraph interviews produced far more information than the background investigation, the contributions of the latter were vital, and often on matters not developed or even covered in the polygraph interview. For example, credit is discussed in a full scope polygraph screening examination, but it is not the subject of a specific polygraph question because it is not practical to develop a dichotomous issue. Similarly, character deficiencies, alcoholism, a poor work record, and many other topics are often better learned from the observation of others, or from official records. In addition, the background investigation provides positive "whole person" information. The obvious conclusion was that both sources of informtion are productive, each from different sources, and both vital to the process of evaluation for clearance and access.

1.4.3 1974 - 1979 Polygraph Results from Cleared Military Personnel

A study was made of admissions made by applicants who were currently or recently in the military service who were cleared for SCI access and were in a cryptologic service. This table includes the 2,426 who applied in the fiscal years 1974 through 1979.

Admissions During Polygraph Interviews, FY 74 - 79
from 2,426 Military Applicants

Topics	Number of Persons making Admissions	Percentage
Espionage	13	0.6%
Communist, Fascist or Terrorist Activity	25	1.0%
Divulgence of Classified Information:		
To family	135	5.6%
To others	132	5.4%
Secret Foreign Contacts	1	.04%
Soviet Bloc Travel	70	2.9%
Soviet Bloc Contacts	60	2.5%
Drugs		
Marijuana	1654	68.2%
Marijuana over 100 times	159	6.6%
Uppers, Downer, etc.	243	10.0%
Cocaine and Heroin		65
2.7%		
Crimes		
Misdemeanors	322	13.3%
Felonies	68	3.3%
Alcohol Problems		
Past	25	1.0%
Present	4	0.2%
Deliberate Falsification of the Security Form	152	6.3%
Serious Credit Problems	57	2.3%
Psychological Problems		
Treatment	107	4.4%
Suicide Attempted	14	0.5%

In regard to the espionage admissions, most knew of or had strong reason to suspect others of engaging in espionage against the United States but had not reported it. A few were personally involved in espionage. See examples in this chapter.

1.4.4 1981 Polygraph Results from Cleared Military Personnel

A study was made of the 318 applicant cases for FY 81 in which the applicant was currently or recently in the military service in a cryptologic assignment with SCI access. In every case they had been the subject of a Special Background Investigation at some time in their career, and some had update investigations. All these investigative results had been evaluated as satisfactory for clearance and access. In some cases, the background investigation was in the security file available to the examiner. In the majority of cases it was not.

The table below lists only that information obtained during the polygraph examination which was not in the security file. The tables exclude all information obtained during background investigation, special investigations, and security interviews.

Admissions During Polygraph Interviews, FY 81
from 318 Military Applicants

Topic	Number of Persons making Admissions	Percentage
Espionage	0	0
Communist, Fascist or Terrorist Activity	1	0.3%
Divulgence of Classified Information:		
To family	13	4.1%
To others	10	3.1%
Secret Foreign Contacts	0	0
Soviet Bloc Travel	15	4.7%
Soviet Bloc Contacts	6	1.9%
Drugs		
Marijuana	141	44.3%
Marijuana over 100 times	16	5.0%
Uppers, Downers, etc.	31	9.7%
Cocaine & Heroin	12	3.8%
Crimes		
Misdemeanors	38	11.9%
Felonies	12	3.8%
Alcohol Problems		
Past	7	2.2%
Present	1	0.3%
Deliberate Falsification of Security Form	7	2.2%
Serious Credit Problems	14	4.4%
Psychological Problems		
Treatment	14	4.4%
Suicide Attempted	5	1.6%

Not all of the admissions listed above were disqualifying. The table does not disclose amounts or recency.

Note that the first major topics are similar to the topics usually included among the questions in counterintelligence polygraph examinations used for special access determinations.

1.4.5 1983 - Study of Interviews/Polygraph

One of the additional techniques sometimes used in processing people for classified access, particularly SCI, is a thorough security interview. For several years, NSA has conducted security interviews of incoming military personnel assigned to NSA. The interviewers are experienced Special Agents of NSA who are specifically trained for this work. The scope of their interview is very similar to that of the polygraph examinations given by NSA to civilian applicants for clearance and access.

A 1983 study at NSA reviewed the information obtained on 13 topics that are covered in both the security interview and the polygraph examination. A random sample of 100 security files containing military security interviews was taken from the list of those military persons who were interviewed between March 1981 and July 1983 on arrival at NSA. Another random sample of 100 cases for that period was taken from the security files in which there was a polygraph examination of a military assignee to NSA who took the examination as part of his processing for civilian employment at NSA.

In 49% of the cases, the interviewers obtained admissions from already cleared incoming military personnel which required security adjudication. In all, there were 87 specific admissions. The subject matter included ten of the thirteen topics covered in both the interview and the polygraph examination.

The polygraph examiners obtained admissions requiring security adjudication in 82% of the examinations of the already cleared military personnel who were seeking civilian employment. There were a total of 111 specific admissions. The admissions covered nine of the mutual topics.

A second analysis compared the security interview conducted on entry and the subsequent polygraph examination of those 100 military persons who applied for a civilian position at NSA. The security interview predated the polygraph examination by a range of a few months to three years. The polygraph examiner, ofcourse, had access to the interview report prior to the examination. What is interesting is that in these 100 randomly selected cases the examiner got information which predated the security interviews, on nine of the thirteen mutual topics. For example, in 31 cases (31%), the examiner obtained information on drug involvement that predated the security interview.

1.5 SURVEYS OF EXAMINEES

1982 Air Force Survey

In 1982 the Air Force began a pilot polygraph project to conduct conunterintelligence/security polygraph examinations of personnel who have access to extremely sensitive and highly classified USAF projects. After the project began, AFOSI began a survey of individuals who had voluntarily taken an examination in connection with that access. The questionnaire was answered in the reception room immediately following the examination out of the presence of the examiner. No identifying data was included with the replies. The 1,355 individuals responding to the survey gave their answers, totaled below in percentages, to each of the six questions. The "other" response includes answers such as "don't know" and no answers.

	YES	NO	OTHER
a. Were you offended, embarrassed, humiliated or degraded in any way during any part of the examination?	2.0%	98.0%	0
b. Do you think the examination was unfair in any way?	.9%	99.0%	.1%
c. Was there any objectionable or unwarranted invasion of your privacy during the examination?	.7%	99.1%	.2%
d. Do you feel counterintelligence security polygraph examinations enhance the security of your work environment?	94.9%	4.1%	1.0%
e. If you changed jobs and your new employer required a counterintellignece security polygraph examination, would you undergo the examination?	98.2%	1.5%	.3%
f. If an act of sabotage of espionage occurred and you were asked to take a polygraph examination to find the person who committed these acts, would you take a polygraph examination to resolved the matter?	99.2%	.7%	.1%

There are only two other surveys of employees who have taken polygraph examinations for security clearance and access, or have taken counterintelligence examinations.

1.5.1 1951 Survey of Atomic Energy Commission Employees

In 1951, Professor Paul V. Trovillo, a psychologist from Arizona State University, was employed to survey the use of the polygraph by a private contractor, Russell Chatham, Incorporated, at Oak Ridge, Tennessee. His survey covered the use of the polygraph on employees at the Atomic Engergy Commission facilities who had sensitive access. All of the employees had a full field background investigation conducted by the FBI. The period covered by the survey was 17 February 1946 to 10 April 1951. (It is noted that none of the persons involved in the extensive Soviet atomic espionage network which operated during those years were among those who took polygraph examinations at Oak Ridge, Tennessee. Whether or not the polygraph deterred Soviet intellignece from an attempt to penetrate the Oak Ridge facility is unknown.) Trovillo reported that approximately 12,000 polygraph examinations were conducted in that period, including applicants for clearance by employees of contractors, and applicants seeking initial employment which required a Q clearance. In addition to the initial polygraph examination, each employee was subject to additional examinations. Depending on the sensitivity of access, some employees were reexamined every three or six months.

Trovillo personally interviewed a representative sample of employees who were in the retesting program. The employees included engineers, scientists, clerks, and chemical workers, including their union President. Of the 59 interviewed by Trovillo, only two (3.4%) expressed any resentment toward the polygraph tests (Trovillo 1947).

1.5.2 1956 Survey of NSA Applicants

A survey was taken of all applicants for employment at NSA who were processed in January 1956. Of the 522 applicants who were surveyed, 361 were male, 362 were unmarried, 186 had a baccalaureate degree in a liberal arts field, and 206 had a degree in a scientific field. The survey covered these statements, with the responses indicated in percentages:

a. The polygraph examiner impressed me as being professionally competent and well trained.

1. strongly agree 58%
2. agree 36% agree
94%
3. undecided 4% undecided
4%
4. disagree 1% disagree
2%
5. strongly disagree 1%

b. In my opinion, the polygraph as used by NSA is important to protect the security of the Agency.

1. strongly agree 38%
2. agree 36% agree
74%
3. undecided 19% undecided
19%
4. disagree 5% disagree
7%
5. strongly disagree 2%

c. If for future reasons, I were asked to volunteer for another polygraph examination, I would:

1. be willing 91%
2. undecided 8%
3. refuse 1%

1.5.3 Surveys in Law Enforcement and Commerce

The Washoe County Sheriff's Department (Reno, Nevada) surveyed 85 applicants after their preemployment polygraph examinations. The results were tabulated (Putnam 1978) according to the responses to these questions:

1. Were you in any manner embarrassed, humiliated, or degraded by any part of the polygraph examination process? No: 92.9% (n=79), Yes: 7.1% (n=6).

2. In your opinion, was there any objectionable or unwarranted invasion of your privacy during the conduct of the polygraph examination? No: 100% (n=85).

3. Should you be hired, do you believe you will be more secure and comfortable in your work knowing the polygraph is used in personnel evaluation? Yes: 97.6% (n=83), No: 1.2% (n=1), no opinion: 1.2% (n=1).

Several very similar surveys of subjects of commercial screening have been made in recent years. Dr. B. A. Silverberg of Canada conducted three surveys of the subjects of polygraph examinations in 1980 asking the same questions used earlier in surveys by Ash (1973) and Buckley (1980). The questions were used again recently by Phannenstill (1983). A table shows the results of the six surveys. The answers which are other than the one listed for each item are mostly the opposite, but there are also a few unclear replies, or no answers at all to that item.

TABLE

SURVEYS OF EXAMINEES OF COMMERCIAL TESTING

% (Number) Answered NO to These Questions	Chicago Ash, 1973 n=241	Chicago & Denver Buckley, 1980 n=270	Buffalo & Western N.Y. Silverberg, 1980 n=102	Toronto Silverberg, 1980a n=217	Toronto Silverberg, 1980b n=115	Milwaukee Phannenstill, 1983 n=220
1. Do you think the test was unfair in any way?	86% (208)	90% (244)	100% (102)	99% (216)	99% (114)	89% (195)
2. Did the test or any part of it offend you?	91% (220)	87% (235)	97% (99)	98% (212)	98% (113)	87% (191)
3. Do you think the test was an invasion of your privacy?	83% (200)	77% (209)	98% (100)	98% (213)	98% (113)	79% (173)
ANSWERED YES						
4. If the occasion arose would you take a test like this as an applicant for a job?	96% (232)	94% (253)	93% (95)	95% (207)	93% (108)	94% (207)
5. If a loss occurred at your company and you were asked to cooperate by taking the test to help find the person who caused the loss, would you?	97% (233)	97% (263)	96% (98)	96% (209)	97% (111)	96% (210)

1.6 QUALITY CONTROL

1.6.1 Selection and Training

The quality control program within the Department of Defense begins with a detailed selection process of applicants for polygraph training. By regulation all applicants must be trained investigators with a minimum of two years Federal Government investigative experience and possess a baccalaureate degree. Applicants must also be a U.S. citizen, 25 years of age who have been the subject of a Special Background Investigation. The culminating application procedure has the qualified applicant undergo a suitability and familarization polygraph examination prior to final selection. Polygraph training is always on a voluntary basis. Most important, agencies are careful to select only those agents who have demonstrated mature investigative and personal attitudes. Examiners must be able to conduct low key interviews as well as intense interrogations. They must be highly professional investigators who get along well with subordinates and superiors, as well as suspects, witnesses and victims.

The basic examiner training is accomplished at the Army Polygraph School, Fort McClellan, Alabama. This course is 12 weeks in length. The examiner learns various test techniques and receives instruction in psychology, physiology, pharmacology, semantics, and polygraph instrumentation procedures. Each trainee conducts at least of 45 to 50 practical exercise examinations prior to graduation. After graduation each examiner serves a six to twelve month internship under the direct supervision by a certified examiner of his respective agency.*

In 1965 DoD initiated research to establish the validity of polygraph techniques and sought a means of monitoring field polygraph operations by having a qualified polygraph examiner conduct a "blind" analysis of the polygraph charts and allied documentation of another examiner. After a comprehensive study, it was concluded that blind analysis was a valid concept which would increase the quality of polygraph examinations. This concept led to the polygraph quality control programs now existing throughout the DoD. Under the quality control concept, supervisory polygraph quality control examiners, generally located at the headquarters level, review every polygraph examination conducted within their respective agencies. The review begins with a "blind" analysis of all polygrams collected by the field examiner. Once the "blind" analysis is performed, the reviewer then checks all related documents for correctness, completeness and technical accuracy. The specific areas reviewed are pretest interview, test construction, question formulation, chart patterns, chart markings, timing of questions, post-test interrogation, length of examination, and the polygraph report. Any notes, examiner comments and written admissions are analyzed and compared to the information contained in the formal report. The formal report is also checked for grammatical correctness and format prior to final approval.

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*NSA examiners take another two weeks of formal instruction in counterintelligence screening techniques before beginning their internship. NSA always includes students and experienced examiners from other DoD agencies in their course whenever requested; and on a space available basis, NSA trains examiners from other federal agencies.

At NSA, every case is completely tape recorded. In all cases where the subject of the interview has made admissions which will be reported and will require evaluation prior to granting clearance and access, the examiner reviews with the subject, in precise detail, the contents of his notes. While doing that, he makes an additional recording with a cassette recorder in full view of the subject, and has the subject audibly acknowledge the accuracy of his notes on each topic as it is covered. When the supervisor reads the examiner's report he must listen to this summary tape and certify on the report that the accuracy of the report has been verified by listening to the recording.

All Air Force counterintelligence/security examinations are audio and video recorded. Similarly, review of the audio and video tapes of these examinations by polygraph supervisors provides a detailed quality control check. In criminal cases, and specific issue cases, it is customary to take a witnessed, signed, sworn statement covering all admissions/confessions. A written statement containing a subject's admission/confession is documented in the final report as well as any refusal to undergo further questioning or polygraph testing.

Each agency keeps independent statistics and oher personal information on the professional attributes, training qualifications and performance of each examiner. If an examiner's proficiency is found to be falling below accepted standards, supervisor determines if the problem is the result of an atypical series of cases, or a change in the examiner's methodology. Methodology changes are discussed with the examiner and, when appropriate, corrective action is taken.

Advanced training of at least one week or more is required once every two years for all DoD polygraph examiners. In addition, examiners generally receive several days of advanced training throughout each year by attending state and national polygraph association meetings and seminars. Advanced training is an integral part of the quality control program within the Federal Government as it assures the continuing professional development of each examiner.

1.7 US ARMY POLYGRAPH TRAINING FACILITY

The first use of the instrumental detection of deception was in World War I to recover a stolen code book. The U. S. Army began using the modern polygraph during World War II to screen German prisoners of war (POW) for post-war police assignments. Use of the polygraph spread quickly into criminal and counterintelligence investigations due to the success of the polygraph in resolving the POW cases. Some Army agents received individual instruction in polygraph techniques, and in 1948, the Army began sending special agents to the new Keeler Institute, in Chicago, Illinois, the only polygraph school in existence at the time. The Army's training needs soon exceeded the capacity of the Keeler Institute. Therefore, in 1951 the Army established its own polygraph school and attached it to the Military Police School at Fort Gordon, Georgia. Initially, the school was eight weeks in length and was used exclusively by the military services and the U.S. Secret Service.

In 1964, as a result of the Moss Committee Hearings about the use of polygraph in the federal government, the need for more extensive training was recognized and the school was lengthened to 12 weeks. In 1969, the school was lengthened to 14 weeks in order to accommodate training requirements by military and federal intelligence agencies in the personnel security screening arena. As use of the polygraph in the federal government increased, all federal investigative agencies, except the CIA, began training their examiner personnel at the Army school. Three agencies gave up their own training courses to take advantage of the Army training.

In 1975, the Military Police School and the Polygraph School were moved to Fort McClellan, Alabama. During 1980, to accommodate the increased training requirements of the other federal agencies, the school was condensed to 12 weeks, permitting an increase of sessions from three to four classes per year.

Since the school's founding in 1951, the U.S. Army has trained over 2,000 military and federal civilian investigators to be polygraph examiners. Numerous training requests are received each year from state and municipal police agencies. While these requests cannot be accommodated in the basic training course, occasionally spaces are provided to state and municipal examiners in the advanced training course. The Defense Department plans to expand the Army Polygraph training facility to handle a maximum 18 students per class. Once expanded, the Army may be able to be more responsive to state and municipal police agency training requests.

There are two programs of instruction at the U.S. Army Polygraph School. The primary program of instruction is the Basic Polygraph Examiner Training Course, which is now twelve weeks in length and is conducted four times a year. Each class consists of 12 students and the student to instructor ratio is 2 to 1. This ratio provides the student with many hours of personal contact with qualified instructors during the learning process. Further, each student conducts over 40 polygraph examinations using a variety of testing techniques. This exposure to simulated testing and the instruction in multiple testing techniques has established the Army school as the leader in polygraph training.

The second program of instruction at the school is the Advanced Polygraph Examiner Course, which is three weeks in length. It provides experienced examiners with training in new instrumentation procedures and sophisticated testing techniques. These lessons are then incorporated in comprehensive practical exercises.

By regulation all DoD examiners must attend at least one advanced training course every other year. In practice, all examiners are involved in several short courses, seminars, and lectures every year, with a full course of a week or more at least every other year. Many get a week or more of formal training every year. Advanced courses used by DoD examiners are quite varied. Most commonly used are:

U. S. Army Advanced Course	3 weeks
Federal Interagency Polygraph Seminar	1 week
National Security Agency Advanced Polygraph Screening Techniques Course	2 weeks
Federal Bureau of Investigation Advanced Polygraph Studies Program	4 weeks
Delta College Polygraph Workshop	1 week
University of North Carolina Polygraph Colloquium	1 week
University of Houston Advanced Polygraph Seminar	1 week
University of Utah Polygraph Workshop	1 week
American Polygraph Association Annual Seminar	1 week

In addition, most DoD examiners are active in a regional or state polygraph association. These associations hold one or more weekend seminars each year, and a few conduct lengthy training courses, often in conjunction with local universities. Several of the courses above and some of the state associations seminars offer college credits or continuing education units.

1.8 PRIMARY POLYGRAPH TESTING TECHNIQUES

The test formats taught at the Army Polygraph Training Facility include the following:

1.8.1 Zone Comparison Technique (ZCT)

The ZCT was developed by Cleve Backster in 1960. The ZCT is a modification of the control question concept developed in the 1940's and introduced two new safeguards against errors and inconclusive results. The safeguards are referred to as the sacrifice relevant and symptomatic questions. The sacrifice relevant question allows for dissipation of excessive general nervous tension or undue anxiety prior to the asking of the primary relevant questions. The symptomatic question provides a means to identify outside issues extraneous to the test issue(s) which may be of overwhelming significance to the examinee. Identification of such issues aids the examiner in structuring a reliable test that is not degraded by these external issues. The symptomatic question also helps the examiner to properly word the relevant questions. Backster's ZCT was adopted by the Army in 1961. It is the technique of preference for resolving criminal issues which are limited or easily defined. The ZCT, as used by the Army, permits the asking of questions pertaining to two primary issues in the body of the test. It also has a "SKY" phase utilized on one or two charts which helps determine the degree of the examinee's criminal knowledge, if any, of the primary relevant issue. Because of its demonstrated accuracy (Bersh 1969), it has become one of the most popular and widely used techniques in government law enforcement.

1.8.2 Modified General Question Technique (MGQT)

The MGQT was adapted by the Army in 1956 from the 1953 Reid control question test. It is the technique of preference in criminal investigation testing where there are multiple issues within a singular case to be resolved, as it allows the examiner to address primary involvement, secondary involvement, guilty knowledge and evidence connecting issues. The MGQT is one of the more popular examination formats in government law enforcement because of its flexibility. In addition to being able to address multiple issues, examiners can shift the relevant questions on one or more charts by collecting a mixed series questioning sequence. The Army's MGQT utilizes control questions which are separated from the relevant issues by time and/or place.

1.8.3 Relevant/Irrelevant (R/I)

The R/I techniques were developed in the 1920's and 1930's, and the Keeler version became the first standardized polygraph question technique. R/I techniques were used exclusively within the U. S. Government until 1956, when a control question technique was introduced. R/I techniques are used extensively in intelligence screening examinations and occasionally in criminal investigations. R/I techniques in the government employ the use of irrelevant questions interspersed among relevant questions, plus additional special purpose questions, including one or more control questions. The R/I technique is the technique of preference for people who decline to answer broad crime-related questions necessary for the development of control questions as they are used in ZCT and MGQT, as well as persons who are familiar with criminal polygraph testing procedures.

1.8.4 Peak of Tension (POT)

The POT was standardized by Leonarde Keeler in the 1930's and is used in conjunction with virtually every type of testing technique known to polygraph. Essentially, the POT is a guilty knowledge test where the examinee's knowledge of a particular item within the overall testing issue can be detected. This test is frequently used to find weapons, bodies, property, etc. In can be a known POT, wherein the examiner and the guilty subject knew the key item and the innocent person does not, or a searching POT, where the key item is only known by the guilty subject and not by the examiner.

1.8.5 Counterintelligence Screening Test (CIST)

The CIST is a general question test used to cover multiple issues pertaining to intelligence or counterintelligence activity. If an examinee shows response to relevant questions during the course of an examination, the issues to which the examinee showed responses will be completely explored through the use of other polygraph techniques or through interrogation. Each relevant question will be asked at least three times.

1.8.6 Other Techniques

The techniques described above are among the techniques utilized in the federal government. There are a number of other techniques used in the law enforcement and commercial polygraph field. Among the more popular are those developed by John E. Reid, Richard O. Arther, and Lynn Marcy. Although some civilian schools teach these techniques, there are other civilian schools which teach the Army techniques, or teach both Army and other techniques. Government examiners are given familiarization lectures on the more common other techniques so that they will understand them; but they are not expected to use them.

CHAPTER 2 - RESEARCH ON POLYGRAPH CRITERION VALIDITY AND RELIABILITY

2.1 FIELD STUDIES

Field studies have investigated both the validity and reliability of the polygraph using various criteria. These studies typically use field model polygraphs which record respiration, electrodermal activity, and cardiovascular activity. Professional polygraph examiners are typically used, but they differ widely in experience. Some examiners are still in internship training programs; others have as much as 20 years of field experience. Field studies have used both relevant-irrelevant and control-question techniques. A description of the standardized formats appears in the Chapter on Utility.

The original examiner's decision of truth or deception is often a clinical judgment based on information from physiological recordings, subject behavior, and case facts, although some data on the numerical scoring of polygraph charts also will be discussed. Most of the field studies suffer from significant methodological problems.

Two types of studies will be discussed. First, studies investigating the relationship between the examiner's decision and some criterion of truth or deception will be presented as studies of polygraph criterion validity. All of these studies use the clinical diagnosis of the original examiner to predict the criteria. However, two of the studies (Barland and Raskin, 1978; Ginton, Daie, Elaad and Ben-Shakhar, 1982) also use both numerical scoring by the original examiners, and decisions of examiners not present during the test based on numerical evaluation and chart scrutiny to predict truth or deception.

Second, studies investigating the relationship between the decisions of a blind examiner and actual truth or deception using verified polygraph cases will be discussed. Some of these studies have been used as evidence for polygraph criterion validity and there are problems with this interpretation. The final section focuses on the reliability of the polygraph examiner's decision.

2.2 FIELD STUDIES OF CRITERION VALIDITY

Field studies of criterion validity have used various criteria of ground truth. Determination of ground truth is the major problem for such studies. The ideal criterion is independent of the polygraph examiner decision of truth or deception and accurately reflects subject guilt or innocence. If examiner decision and the criteria are not independent, the accuracy of the polygraph in correctly classifying innocent and guilty subjects will be reported as spuriously high. However, most of the independent determinations of ground truth probably produce spuriously low correct classification rates due to their nature. There is only one study where the criterion is both independent and accurate (Ginton, et al. 1982). This study will be discussed in detail at the end of this section.

Several studies have used the criterion of case disposition to assess the accuracy of the examiners' decision (Lyon, 1936; Peters, 1982; Edwards, 1981). Case disposition as a criteria may be neither independent nor accurate. Lyon (1936) determined the dispositions of randomly-selected cases involving 100 juvenile criminal suspects (81 boys and 19 girls over age 15). Twenty polygraph tests were classified truthful and 80 were classified as deceptive. These cases were followed to determine if examiners' results were corroborated by positive evidence or confession. Only 40 cases could be verified. Seven cases classified as truthful by the examiner were verified as truthful by additional evidence. Thirty-three of the deceptive cases could be verified by confessions; some of the confessions occurred immediately after the test. Thus, the examiner had correctly classified all cases. Lyon, however, gives insufficient detail about the verification procedure. Testing involved a unique procedure but was in the relevant-irrelevant category. Respiration and cardiovascular activity were recorded.

Peters (1982) reported on the disposition of 220 cases involving stipulated polygraph examinations conducted at a state crime laboratory from 1976 to 1979. Stipulation means that the prosecution, defense, and judge agree to admit results of the polygraph examination into evidence with the examiner testifying and subject to cross-examination, although the examiner actually testified about the subject's truth or deception in only 11 cases. Control-question procedures and numerical chart analysis (with an inconclusive range) were used. Of the initial 220 examinations, 25 were eliminated because they were inconclusive, 23 cases were eliminated because the test could not be completed. The disposition of 100 cases indicated that the subject was innocent or telling the truth (95 criminal suspects had charges dropped, 1 criminal suspect was acquitted, and 4 victims or witnesses were involved in trials where the accused was convicted). The polygraph examiner had classified 88% of these cases as truthful. The disposition of 63 cases indicated the subject was guilty or lying (10 criminal suspects were convicted at trial, 51 pleaded guilty, and 2 alleged victims were involved in trials where the accused was acquitted). The polygraph examiner had classified 98% of these cases as deceptive. Six cases were pending and 3 cases had charges dropped with conditions (these cases are not included in the correct classification figures).

Edwards (1981) surveyed licensed Virginia polygraph examiners to determine the correspondence between polygraph examiner decisions and dispositions of case in specific issue examinations. Only results from law enforcement examiners will be discussed; the response rate for private firms was so low that it is meaningless. Of the 2,433 polygraph examinations, 959 (594 guilty and 365 innocent) were verified by means such as acquittal, conviction, confession, etc. The examiners had correctly classified 99% of the guilty cases and 97.5% of the innocent cases.

Lack of independence between examiner decision and the criterion can occur in several ways and it is impossible to determine the extent the nonindependence influences the percentage of correct classifications. The examiner can influence the trial process either by increasing the probability of conviction or that charges are dropped. This is a particular problem in the Peters study involving stipulated polygraph tests. Peters does mention that the examiner testified about subject guilt or innocence in only 11 cases, but it is unclear the extent to which the results of the polygraph test were influential in the decision to go to trial or drop charges. Confession also is not independent of the polygraph examination. Examiners usually interrogate only those showing physiological responses to relevant questions. Thus, those showing no deceptive responses will be under less pressure to confess. It also is possible to induce a false confession, although that is extremely rare. Some researchers think the use of confession invalidates the study, others think confession is acceptable as a criterion (see Horvath, 1971; Lykken, 1981; Raskin and Podlesny, 1979).

Field studies using case disposition also are problematical because they report data on a restricted sample. Typically, a large number of cases cannot be verified and it is not clear if verified cases differ from unverified cases in the ease with which an examiner can make a decision about the case. Horvath (1977) provides preliminary data that verified and non-verified cases may be quite similar.

Two field studies have used panel judgments as the criterion to validate polygraph examiner judgment (Bersh, 1969; Barland and Raskin, 1976). Barland and Raskin (1976) is one of the studies Lykken (1979; 1981) cites in maintaining that polygraph tests have a high rate of false positive errors.

Bersh (1969) investigated the reltionship between examiner judgment in criminal investigations by the military services and unanimous guilt-innocence decisions by a panel of four Judge Advocate General Attorneys who had complete access to case files except for the polygraph examinations. Examiners also had access to a subject's case file, but the author maintained the file was not complete and that polygraph tests are only given when there is doubt about a person's guilt or innocence. Cases were selected at random from 1963 to 1966 with some restrictions. Cases involving confession by the subject and inconclusive judgments by the examiner or the panel were eliminated. Cases were selected so that there were similar numbers of deception and no deception examiner judgments and a mix of zone comparison tests, Modified General Question Tests and relevant-irrelevant tests. The first two formats are control question tests. However, Bersh grouped the Modified General Question Test and the relevant-irrelevant test in reporting the data. This was referred to as the General Question Test. Decisions by the panel were unanimous in 157 cases. With the General Question Test group, the examiner classified as deceptive 97% of the cases the panel judged as guilty, and classified as truthful 90% of the cases the panel judged as innocent. With the zone-comparison test, the examiner agreed with 90% of the cases the panel judged as guilty and 94% of the cases the panel judged as innocent.

Barland and Raskin (1976) investigated the correspondence between polygraph examiner decisions and panel decision (1 judge, 2 prosecuting attorneys, 2 defense attorneys) for 92 sequential independent cases involving criminal suspects. Panel decisions were based on evidence collected by untrained investigators and the panel had no knowledge of the outcome of the polygraph examinations. Polygraph examinations used control-question procedures. Panel decision was based on a numerical score by each panel member. The original examiner used field numerical scoring techniques and made a clinical decision from both this and other (e.g. subject's behavior) information.

The panel unanimously made decisions in the same direction in only 22 cases (24%) so these data will not be discussed separately but are included among those 66 cases (72%) where the criterion was a majority of the panel making a decision in the same direction. Among the 66 cases, 100% of the guilty subjects and 35.7% of the innocent subjects were correctly classified (omitting inconclusives) by the original examiner's clinical diagnosis. With the same criterion, original examiner's numerical score correctly classified 100% of the guilty subjects and 27.3% of the innocent subjects (omitting inconclusives). Numerical scoring by an independent examiner correctly classified 97.5% of the guilty subjects and 45.5% of the innocent subjects.

When judicial outcome was the criterion, 100% of the guilty subjects were correctly classified by the original examiner's clinical diagnosis, by the original examiner's numerical analysis, and by the independent evaluator (omitting inconclusives). The original examiner's clinical diagnosis and numerical analysis correctly classified 14% and 17% of the innocent subjects, respectively (omitting inconclusives) with the judicial outcome criterion. The independent examiner correctly classified 43% of the innocent subjects.

Thus, the Bersh, and Barland and Raskin studies both find high agreement between panel decision of guilty and a polygraph examiner decision of guilt, but differ dramatically in agreement between panel and examiner for innocent cases. Several possible reasons have been suggested for this discrepancy (see Lykken, 1979; 1981; Barland, 1982; Raskin, 1978). In the Bersh study, examiner decisions were not totally independent of panel decisions since the examiner had access to limited case data - enough to conduct the polygraph test. This may have increased the correspondence between examiner decision and panel decision beyond that which is representative. However, Barland and Raskin note that the panel in their study often received case files with only small amounts of information. The panel did not necessarily have the police reports, but did have the subject's explanation of the events (Barland, 1982). This lack of information is reflected by the few cases of unanimous panel decision. Barland and Raskin also note that 34 of the cases were tested with a polygraph in poor mechanical condition suggesting that the polygraph examiner had poor charts in certain instances. Thus, the figures reported by Barland and Raskin may underrate the typical agreement between examiner results and a panel decision.

Panel judgments pose a further problem as a criterion. Although the panels were to judge cases only on merit and ignore legal technicalities, our judicial system classifies a person as guilty only with overwhelming evidence. Thus, panels composed of persons with legal training may be biased towards calling people innocent if there is any doubt about their guilt.

There is only one study where actual guilt/innocence of the subject is independent of the polygraph examination and in which there is certain knowledge of ground truth (Ginton, et al., 1982). This study has been classified as a field study because it used a real-life situation and subjects thought there would be consequences from failure to pass the polygraph test.

Twenty-one Israeli policemen were administered a series of pencil-and-paper tests presented as part of a police course. Beneath the answer sheet for one of the tests was a hidden chemical page that recorded what was written on the answer sheet. The chemical page was removed, the answer sheet returned and subjects scored their own tests. Seven subjects actually changed their answers during the scoring. Several days later subjects were informed that cheating was suspected and were offered an opportunity to take a polygraph test. They were told their career may depend on test results. Fifteen subjects, 13 innocent and 2 guilty, were actually tested with control-question procedures administered at police laboratories by professional polygraphers. Electrodermal activity, cardiovascular activity, and respiration were recorded. There were three participants in each case - an examiner, an observer in an adjacent room, and a blind chart evaluator. Thus, each participant had different information by which to make a decision of truth or deception. The examiner made his decision based on the polygraph charts and subject behavior, the observer made his decision based only on subject behavior, and the chart analyst used only the polygraph charts. In addition to the their overall impressions, the examiner and the blind chart evaluator also scored the tests using field scoring techniques. Each relevant-control pair was scored from +3 to -3 and summed across physiological response systems, questions, and charts. Total scores from +5 to -5 were called inconclusive. Additionally, 8 other examiners analyzed the charts using both general chart scrutiny, and the numerical scoring method.

Only the data from the examiner, the blind chart evaluator, and the 8 additional examiners will be presented. Using only his clinical judgment, the original examiner correctly classified 100% of the guilty subjects and 85% of the innocent subjects; there were no inconclusive decisions. Numerical field scoring increased the number of inconclusives; one guilty subject and six innocent subjects were classified inconclusive. Omitting inconclusives, the original examiner correctly classified 100% of the guilty subjects and 86% of the innocent subjects using numerical field scoring techniques. The blind evaluator correctly classified 50% of the guilty subjects (none of the guilty were classified inconclusive) and 70% of the innocent subjects using only general chart scrutiny (omitting inconclusives). Numerical field scoring increased the number of inconclusive decisions and improved the accuracy (omitting inconclusives) of the blind evaluator: 100% of the guilty subjects and 83% of the innocent subjects were correctly classified.

The 8 additional examiners correctly classified 94% of the guilty subjects with chart scrutiny and 100% (omitting inconclusives) of the guilty subjects with numerical analysis. Omitting inconclusives, their decisions from general chart scrutiny correctly classified 82% of the innocent subjects and their decisions from numerical analysis correctly classified 83% of the innocent subjects.

There are a number of additional field studies but they have severe methodological defects. Ben-Ishai (1962) reports 94% correspondence between examiner judgment and case outcome as determined by a student who had collected additional data on the case, but presents no detail on methods used in the polygraph examination or in case verification. Bitterman and Marcuse (1947) report 100% agreement between polygraph decisions and actual truth with 81 subjects in an actual crime but this study contained no subjects guilty of the crime. Elaad and Schahar (1978) report that polygraph examiners correctly classified as deceptive 96.6% of the subjects who were actually guilty; however, this study contained no innocent subjects. It is difficult to draw conclusions from studies using only guilty or only innocent subjects because the examiner would have high correct classification rates merely by a bias to call all subjects innocent or all subjects guilty. There also are older studies reporting high correct classification rates (e.g. Mac Nitt, 1942), but these studies give insufficient detail about procedures and are impossible to evaluate.

Field studies of criterion validity are fairly consistent in their results for guilty subjects. When original examiner subjective decision is used to predict the criteria, 90% to 100% of the guilty subjects have been correctly classified. Results are similar for studies using a criterion that is independent of examiner decision and studies using a criterion correlated with examiner decision. Numerical field scoring by the original examiner, chart scrutiny by a blind examiner, and numerical analysis by a blind examiner does not appear to alter the percentage of guilty subjects correctly classified when inconclusives are omitted.

The results for innocent subjects are much more variable. When original examiner's clinical judgment is used to predict the criterion, omitting inconclusives, from 14% to 100% of the innocent subjects are correctly classified. The Barland and Raskin (1976) study was the only one to show poor results; and problems with this study have been discussed. Omitting the Barland and Raskin data, 85% to 100% of the innocent subjects were correctly classified. It is important to note that the study reporting a 85% correct classification figure used a criterion that was both independent of original examiner decision and accurate (Ginton et al., 1982).

Percentage of correct classification for innocent subjects does not appear to change when the original examiner uses numerical scoring and when a blind evaluator makes either clinical or numerical decisions. Additional data on the relationship between different types of examiner decision is discussed in a subsequent section.

2.2.1 Relationship Between the Decisions of Blind Examiners and Ground Truth Using Verified Polygraph Cases

The studies discussed below investigate the ability of examiners working in the blind to correctly classify subjects as truthful or deceptive using verified cases. Since ground truth is known, these studies are cited by some researchers as providing evidence on polygraph validity. For example, Lykken (1978; 1981) cites Horvath (1977) as a validity study and uses it as evidence that polygraph tests misclassify large numbers of people.

There are several problems with these studies. First, they do not provide information about the validity of the original examiner's decisions unless the original examiner makes his decision using only information from the polygraph charts (this is more likely when numerical scoring is used). In most cases the original examiner uses both the polygraph charts and additional information in his decision (e.g. subject behavior and case information). Since the two decisions were based on different types of information, these studies will only provide information on the validity of the blind evaluator's decision based solely on the polygraph charts (Barland, 1982).

It is debatable whether these studies are even validity studies of the blind evaluator's decision because the description of sample selection in most of the studies suggests only verified cases confirming the original examiner's decision were used. If cases where the original examiner's decision is incorrect are eliminated from the sample, the sample has a very restricted range. A true validity study also would investigate how the blind examiner scores the cases not correctly classified by the original examiner. However, incorrect decisions were not necessarily eliminated. All of the verified cases Horvath (1977) found agreed with the original examiner's decision. Thus, there is enough confusion in the reporting of sample selection in all of the studies using verified cases to make them problematical.

It could be said that use of a restricted sample of only those verified cases confirming the original examiner's decision would overestimate the validity of the blind examiner's decision and that validity could not be any higher than what is reported in these studies. However, it is possible that the type of decision the original examiner makes influences the polygraph test. For example, the original examiner making a clinical judgment from subject behavior, case facts, and polygraph charts may make a decision sooner, possibly with fewer charts, than an examiner who uses only numerical scoring. If the type of decision an examiner makes influences the examination procedure, these studies should not be considered as evidence for the validity of the blind examiner's decision.

A set of studies were conducted at John E. Reid and Associates, a private firm specializing in polygraph examinations (Horvath and Reid, 1971; Hunter and Ash, 1973; Wicklander and Hunter, 1975; Slowick and Buckley, 1975). These studies use similar basic procedures. Polygraph charts from equal numbers of truthful and deceptive cases verified by confession were selected from the files. The cases contain similar numbers of verified truthful and verified deceptive questions. Polygraph examiners of varying experience administered the standard Reid Control-Question Technique and the examiner made a clinical decision of subject guilt or innocence based on the polygraph charts, subject's overt behavior, and knowledge of case facts. Electrodermal activity, cardiovascular activitiy and respiration were recorded. These charts were then reanalyzed by examiners blind to subject guilt or innocence, and a decision based only on the polygraph charts was made. Thus, the Reid studies indicate the extent to which the original examiner bases a decision on the polygraph charts as opposed to other information. It is important to consider that these studies were conducted at John E. Reid & Associates because the Reid technique emphasizes the use of nonverbal indicators (Mullenix and Reid, 1980; Reid, 1980). None of the Reid charts were scored numerically. Most other schools and techniques give little or no weight to nonverbal behavior.

Horvath and Reid (1971) reported the reanalysis of 40 cases by 10 polygraph examiners. Seven examiners had more than one year experience and 3 were interns, having 4 to 6 months of experience. The 40 cases contained no charts that were obvious to any examiner and none that were uninterpretable. Examiners could call individual questions inconclusive but had to make a guilt/innocence judgment for each case. The 10 examiners correctly classified 85% of the guilty cases and 90.5% of the innocent caes. Omitting inconclusives, 89.6% of the truthful questions and 86.7% of the deceptive questions were correctly classified. The experienced examiners were more accurate, averaging 91.4% correct case classifications and the inexperienced examiners averaging 79.2%. Experienced examiners also had higher correct classification rates for individual questions than inexperienced examiners.

Hunter and Ash (1973) reported on data on the blind rescoring of polygraph records. Seven examiners (6 with more than 1 year of experience and 1 intern) reanalyzed data from 20 cases on two occasions separated by at least 3 months. Examiners did not know they were rescoring the same charts. Similar correct classification rates were found on each occasion. Occasion-to-occasion agreement for the same examiner on the individual cases ranged from 75% to 90% (average 85%) and on individual questions ranged from 67% to 91% (average 81%). Combining occasions and omitting inconclusives, examiners correctly classified 86% of the truthful cases, 88% of the deceptive cases, 85% of the truthful questions, and 88% of the deceptive questions. The authors note that the poorest results were obtained from the examiner with the least experience.

The effect of receiving all of the case information on the scoring of polygraph charts was reported by Wicklander and Hunter (1975). Six experienced examiners (mean experience = 4 years) rescored 20 cases using only the polygraph charts. Omitting inconclusives, 95% of truthful cases, 92% of deceptive cases, 91% of truthful questions, and 91% of the deceptive questions were correctly classified. For the second review, examiners were given the polygraph charts, a description of the case, verbal and nonverbal behavioral symptoms noted by the original examiner, and relevant test questions. This additional information primarily reduced the numer of inconclusive decisions. Omitting inconclusives, 91% of the truthful cases, 98% of the deceptive cases, 92% of the truthful questions, and 97% of the deceptive questions were correctly classified.

Slowick and Buckley, (1975) investigated the effect of using all physiological measures versus each measure independently on percentage of correct decisions. Seven experienced examiners (mean experience = 3.8 years) first rescored the charts from 30 cases using all physiological data and then analyzed each physiological measure independently (at 3-month intervals to avoid recall). Using all physiological measures and omitting inconclusive results, the seven examiners correctly classified 93% of the truthful and 85% of the untruthful cases, and 93% of the truthful and 80% of the untruthful questions. Analysis of individual physiological measures revealed slightly lower correct classification rates; differences between percentage of correct classifications with each measure were small.

The remaining studies used cases from a variety of sources. Kleinmuntz and Szucko (1982a; 1982b) report the lowest figures of all the studies. Polygraph examinations from 50 verified innocent and 50 verified guilty subjects suspected in crimes of theft were obtained. Six polygraph trainees, in the last few weeks of their internship training program, reanalyzed each chart on an 8-point scale with 1 representing definitely truthful and 8 definitely untruthful. Trainees knew the proportion of guilty subjects but did not know who was guilty or innocent. When a single question sequence from one polygraph chart was scored, correlations between trainees' ratings and actual guilt or innocence ranged from .26 to .52. Three of the examiners also scored complete charts. Correlations between their ratings and actual guilt/innocence ranged from .45 to .55.

Horvath (1977) reported data on the effect of several variables on analysis of polygraph recordings. Ten field-trained polygraph examiners from law enforcement agencies (5 having more than 3 years experience and 5 having less than 3 years experience, including some interns) judged a sample of polygraph records from 112 criminal suspects from independent cases. The records were sampled so that there were similar numbers of verified and unverified cases, truthful and deceptive subjects, and crimes against people and crimes against property. Data on the unverified cases will be presented in a later section. Polygraph examinations used standard control-question procedures; electrodermal activity, respiration, and cardiovascular activity were recorded. All examinations included at least 2 charts of the control-question test and 1 stimulation test; 48 examinations (43%) included additional charts. The original examiner decision was based on all of the information in the polygraph examination; decision of the 10 other examiners was solely based on a scrutiny of polygraph charts.

For verified cases, 51% of the truthful cases were classified as truthful by the polygraph examiner, and 77% of the deceptive cases were classified as deceptive by the examiner. Results were similar for verified cases of person crime and verified cases of property crime.

Experience of the polygraph examiner did not influence accuracy. There were effects for number of charts. Seventy-one percent of the records containing only the basic two relevant charts were correctly classifed, whereas 52.5% of the records containing more than the basic battery were correctly classifed (verified and unverified cases combined).

Raskin (1976) reports on the rescoring of records from 12 confirmed guilty subjects and 4 confirmed innocent subjects from the Barland and Raskin (1976) study, by 25 field polygraph examiners with different types of training and experience. Eighteen examiners had at least one year of experience, and 13 had formal training in numerical scoring, of whom 7 explicitly used numerical scoring in their reanalysis of the data. Excluding inconclusives, 90.5% of the 400 decisions were correct. It is not possible from the published data to determine the percentage of innocent and guilty subjects correctly classified because Raskin does not report the percentage of inconclusive results for guilty and innocent subjects separately. If it is assumed that inconclusives are evenly divided, 73% of the innocent subjects and 95% of the guilty subjects would have been correctly classified. Examiner experience did not affect accuracy but other variables did. Examiners who attended schools emphasizing numerical scoring had higher accuracy than examiners attending other schools (97.1% versus 86.9%). Examiners explicitly using numerical soring had higher accuracy (98.9%) than all the remaining examiners (87.9%) and the subsample of examiners trained in, but not explicitly, using numerical scoring (88.5%).

This study also provides some data on the reliability of the inconclusive category. This information is not available in the other studies because they only used cases where the original examiner made a gulit/innocent decision. When the original examiner's decision was based on more than numerical chart analysis, the blind examiner agreed with 85% of cases classified as truthful, 78.9% of the cases classified as deceptive, and 53% classified as inconclusive. When the original examiner's decision was based only on numerical chart analysis, the blind examiner agreed in 91% of the cases classified as truthful, 87% of the cases classified as deceptive, and 71% of the cases classified as inconclusive.

Edel and Jacoby (1975) reported on agreement between the original examiner and blind examiners, and between blind examiners, when both were making the same type of decision. The forty randomly selected cases were from pre-employment screening examinations for a federal agency and contained 25-30 relevant, irrelevant, control, and overall truth questions. Ten experienced examiners (interview experience from 3 months to 10 years) analyzed the charts. Each examiner conducted the original examination in 4 cases and was the blind rater in 8 cases. Thus, each case had one examiner and one blind rater. Examiners and raters were to decide whether a significant physiological response or no significant physiological response occurred to each question in each physiological system recorded (electrodermal activity, cardiovascular activity, and respiration). The analysis for the study, by the original examiner was not done at the time of the examination. It was done later when the examiner also was analyzing the charts from the other examiners' cases.

The examiner and the raters agreed on 96% of the decisions, averaged across physiological measures. The blind raters agreed in 94% of the cases when agreements were averaged across physiological measures. The percentages of correct decisions for each physiological measure were similar.

The studies using blind evaluators to analyze polygraph records of verified cases report a range of correct classifications for guilty and innocent subjects. They are difficult to interpret because the method of sample selection is not clear. If, as many studies indicate, the only cases used were those in which case outcome confirmed the original examiner's decision, then the studies only provide information on how a blind evaluator agrees with the original examiner. When original examiner decision is a clinical diagnosis from case facts, subject behavior, and polygraph charts, it is not surprising that agreement would be low. Furthermore, the type of decision an examiner makes may influence how a test is conducted, making chart usage from one type of examination to make another type of decision problemmatical.

2.2.2 Relationship Between Different Types of Examiner Decisions When Ground Truth is not Known

Studies investigating the relationship between different types of examiner decision when ground truth is not known and the examiners make decisions using the same type of information are reliability studies.

Test reliability refers to whether test results are repeatable; for example, when the test is administered on different occasions or when it is administered by different people are the same results obtained. Test reliability provides some clues as to potential test validity as a test will be able to predict a criterion only to the extent it is reliable. It should be recognized, however, that even if a test is very reliable, it may not be valid.

There are different types of reliability. Critical issues for polygraph examinations are the extent to which different examiners make the same decision of truth or deception from the same polygraph examination, and the extent to which an examiner will draw the same conclusions when the examination is administered to the same subject on different occasions. There is no information on occasion-to-occasion repeatability of polygraph examinations. There is some information on agreement of different examiners when their decision is made from the same type of information.

Barland and Raskin (1976) report data on the agreement between a blind examiner and the original examiner when the original examiner decision was not necessarily correct. Details of this study are already presented in the Validity section. The original examiner had numerically scored the polygraph charts although the decision, in some instances, was based on more than numerical chart analysis. Omitting inconclusives, the blind examiner classified as truthful 100% of the cases classified as truthful by the original examiner, and classifed as deceptive 98% of the cases classified as deceptive by the original examiner. When the original examiner decision was based only on numerical chart analysis, the two examiners agreed in 100% of the cases, excluding inconclusives.

The Kleinmuntz and Szucko (1982) study already discussed reported information on the relationship between the ratings of 6 examiner trainees. Trainees analyzed one chart on an 8-point scale with 1 representing definitely truthful and 8 representing definitely untruthful. Correlations between the scores assigned to the records by the different trainees ranged from .24 to .56. Three of the trainees also scored complete charts; correlations between the three trainees' ratings ranged from .45 to .61.

The Horvath (1977) study provided information on the agreement between the original examiner and ten blind evaluators for unverified cases in addition to the verified case data already discussed. Since the blind evaluators used different information than the original examiner, this study cannot be used as evidence for the reliability of original examiner decision. For the unverified cases, the blind evaluator agreed with 52% of the cases the original examiner classified as truthful and 72% of the cases the original examiner classified as deceptive. However, there was considerable difference in the agreement for person and property crimes with more agreement for innocent subjects in cases of property crime and more agreement for guilty subjects in cases of person crime. Horvath also reported significant consistency among the blind evaluators both for verified (r=.89) and unverified (r=.85) cases.

All but one of the field studies investigating the repeatability of examiner decisions based on the same type of information report high reliability. Unfortunately, all of the data is either on the repeatability of numerical scoring or the repeatability of blind examiner chart scrutiny. There appears to be no data on the relationship between clinical diagnosis of the original examiner and the clinical diagnosis of another examiner when both have equivalent information about the case. The Kleinmuntz and Szucko (1982) study was the only one to repeat low reliability. As previously noted, the examiners in this study were trainees and used only one chart to make their decision.

There are various other reports of the reanalysis of cases that were verified and confirmed the original examiner's decision. None of these studies report how the original examiner made the decision (this was not necessarily the purpose of the study) and it cannot be determined whether errors reflect differences in information available to make a decision or whether they are random. Davidson (1982) provided evidence on the reanalysis of 10 confirmed deceptive and 11 confirmed truthful property crime cases. Seven examiners (experience six months to 14 years) numerically scored records (U.S. Army Polygraph School procedures) containing different types of physiological recordings. The examiners first evaluated only Cardio Activity Monitor recordings (a device designed for the U.S Air Force), then only the electrodermal, respiration, and cardiovascular activity records, and, finally, all recordings to make judgments of truth deception or inconclusive. For guilty cases, 90% of the decisions with the Cardio Activity Monitor, 87% of the decisions with the polygraph and 90% of the decisions with both were correct. For innocent cases, 85.7% of the decisions with the Cardio Activity Monitor, 84% of the decisions with the polygraph, and 88% of the decisions with both were correct. Inconclusive decisions were considered incorrect decisions and it is not possible from the presented data to determine the percentage of guilty and innocent cases correctly classified, omitting inconclusives.

Ben Ishai (1962) reports 10 criminal cases (number of guilty and innocent not known) were accurately classified by comparing average electrodermal response to relevant and control questions. Widacki (1982) reported that 91.6% of guilty (n = 16) and innocent (n = 22) confirmed cases using control-question tests were correctly classified when charts were reanalyzed using the Backster numerical scoring method. Separate percentages are not given for guilty and innocent subjects. Guertin and Wilhelm (1954) reported that factor analytically derived measures of electrodermal activity from relevant-irrelevant tests on 19 guilty and 15 not guilty criminal suspects correctly classified 95% of the guilty subjects and 94% of the innocent subjects.

2.3 Laboratory Studies

In laboratory research the criterion (ground truth) is both independent and accurate because it is controlled by the experimenter. Many laboratory studies have used a mock crime procedure. Subjects are designated as guilty or innocent by the experimenter and the guilty subjects participate in the crime (typically stealing money). The consequence for failure to produce a truthful outcome on the test (i.e. guilty subjects deceiving the examiner and innocent subjects demonstrating their innocence) is generally loss of a monetary bonus. Only a few laboratory studies have used a professional polygraph examiner to test subjects and score records. Many of the examinations are conducted by graduate students under the supervision of psychologists or psychophysiologists with experience in psychophysiological recording techniques. Control-question, peak-of-tension, guilty knowledge, and relevant-irrelevant techniques have been used. Most of the studies measured respiration, cardiovascular activity, and electrodermal activity, although many of the studies using the peak of tension or guilty knowledge test formats measured only electrodermal activity.

Many of the studies have used control-question techniques in the context of determining how other variables such as drugs (Gatchel, Smith and Kaplan 1983), subject characteristics (Raskin and Hare, 1978; Hammond, 1980), information and practice (Rovner, Raskin and Kircher, 1978), and countermeasures (Honts, 1978) effect detection and deception. Although this information is important, it is the purpose of this report to review polygraph accuracy on samples that have not received special procedures. Thus, when studies have manipulated other variables, only information from the normal guilty and normal innocent subjects receiving standard polygraph tests will be analyzed. The results of the manipulated variable are listed in the summary of each study.

2.3.1 Control-Question Test - Criterion Validity

A set of studies by Raskin and his colleagues (Barland and Raskin, 1975; Rovner, Raskin, and Kircher, 1978; Raskin and Hare, 1978; Podlesny and Raskin, 1978) have used similar procedures to investigate detection of deception in a laboratory situation. Subjects are designated guilty or innocent; guilty subjects steal money or an item from a particular location and receive a monetary award for deceiving the examiner. Motivation for innocent subjects to appear innocent varies with the study. The examiners used in the Raskin studies were relatively inexperienced, but Barland, Raskin and Podlesny had attended basic polygraph training courses. Several of the studies recorded many physiological responses, but classified guilty and innocent subjects only from a combination of electrodermal, respiratory, and cardiovascular recordings. All of their studies use a ten-item control question test. Charts are evaluated with numerical field scoring techniques in which each physiological response measure on each control-relevant question pair is scored from +3 to -3 based on the magnitude of the difference, and summed across physiological response measures and questions. Scores below a certain level indicate deception, above a certain level indicate truthfulness. An inconclusive range also is used.

Barland and Raskin (1975) reported on 36 innocent and 36 guilty subjects receiving three presentations of the test. Charts were scored both by the original examiner (experience not discussed) and 5 additional examiners who were professionally trained and experienced in numerical scoring techniques. The authors note that the electrodermal and cardiovascular recordings were not of high quality. Innocent subjects were told the details of the crime and that, if they did not appear innocent on the test, they may not get course credit for participating. An inconclusive range from +4 to -4 was used. The original examiner correctly classified 88.5% of the guilty subjects and 71% of the innocent subjects when 25 inconclusives were omitted from the analyses. Correct classifications for the five additional examiners ranged from 79% to 86% (mean = 82%, results are not presented separately for innocent and guilty subjects).

Rovner, Raskin, and Kircher (1978) reported on the effects of information and practice on detection of deception. Only the group receiving the standard polygraph test will be discussed in this report. There were 12 innocent and 12 guilty subjects in the standard group and they received three presentations of the test. The inconclusive range in this study was from +5 to -5. Money was used to motivate innocent subjects to appear truthful on the polygraph test. Innocent subjects were not told the details of the crime; they were merely told that a theft had occurrred. Classification results are from the scoring of another evaluator who did not observe the test. Omitting the 2 inconclusives, 100% of the guilty subjects and from 90% to 92%* of the innocent subjects were correctly classified.

Similar correct classification rates were reported by Raskin and Hare (1978) in a study on the effect of psychopathy on detection of deception using a professional polygraph examiner. Only the results from the 12 inncocent non-psychopaths and 12 guilty non-psychopaths will be discussed. Money was used to motivate innocent subjects to produce a truthful outcome on the test. The authors state that the innocent subjects were informed about the crime. The examiner continually stressed the importance of being truthful to all subjects thereby directing the attention of innocent subjects to the control questions and guilty subjects to the relevant questions. Subjects received from 3 to 7 presentations of the test and were initially classified from the first three charts using inconclusive range of between +5 and -5.

If this classification was inconclusive, additional charts were scored. Between each chart, questions were discussed with the subjects and reworded if necessary. Omitting the 4 inconclusives, 100% of the guilty subjects and 91% of the innocent subjects were correctly classified. Comparsion of classification accuracy for subjects receiving more than three charts with those only receiving three charts demonstrated that additional charts reduced the number of inconclusive decisions.

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[*] Since the study does not report the actual status of the inconclusive subjects, it is not possible to cite a precise figure for the percentage of innocents subjects correctly classified.

Podlesny and Raskin (1978) reported results both on the control-question test and the guilty knowlege test. Only the control-question results will be reported here; guilty knowlege tests result will be discussed in a subsequent section. Twenty subjects were guilty and twenty subjects were innocent. Half of the subjects received a control-question test with nonexclusive control questions. Half received tests with exclusive control-questions. A nonexclusive control-question has no limit as to time, and thus includes the period in which the offense occurred. The exclusive control-question excludes the offense under investigation by referring only to an earlier period in the subject's life. The innocent subjects received a brief description of the crime but they did not know its details. Money was used to motivate innocent subjects. Subjects received 3 or more presentations of the test. Between charts subjects were questioned and the wording of the control-questions was changed if necessary. Results for different methods of quantifying results are reported; those using the conventional inconclusive range of from +5 to -5 will be presented. Charts also were scored by a blind rater who had not observed the polygraph test. Omitting the 4 inconclusives, 82% of the guilty subjects and 95% of the innocent subjects were correctly classified. Slightly higher correct classification rates were found for exclusive control-questions than non-exclusive control-questions.

There are a number of other studies using control-question procedures in a mock crime situation. Dawson (1977) presents a brief report on detection accuracy with ten guilty and ten innocent subjects. Different methods of scoring the responses were used; the results with the standard procedure are of interest here. When average vasomotor and electrodermal responses to relevant and control questions were compared, 89% of the guilty subjects and 71% of the innocent subjects were correctly classified omitting the 4 inconclusives. An additional study (Dawson, 1977, 1980) investigated the ability of actors using the Stanislavsky method of acting to deceive the polygraph examiner, but will not be discussed since the purpose of the test was to evaluate a countermeasure method and a variation in polygraph technique.

Hammond (1980) reported on normal college students, alcoholics, and psychopaths, but only the data from the college students will be presented. There were 11 innocent and 10 guilty subjects. Instructions for the mock crime were presented by tape and were designed to motivate the subjects. Innocent subjects listened to the same tape and, thus, knew the details of the crime. All subjects received money for a truthful outcome of the test. Inexperienced examiners from the Backster School of Lie Detection in the fifth and sixth weeks of their 7-week training course conducted the tests using zone-comparison procedures and the zone-comparison method of scoring. Respiration, electrodermal activity, and cardiovascular activity were recorded. Testing involved a minimum of three charts, but in most cases only two charts were used for analysis. The inconclusive range in this study was between +8 and -8 . The charts also were analyzed by an expert examiner. Omitting the 7 inconclusives, the student examiners correctly classified 86% of the normal guilty subjects and 57% of the normal innocent subjects. The expert examiner had 15 inconclusives and correctly classified none of the normal innocents and 100% of the normal guilty subjects.

Bradley and Janisse (1981) reported on 96 guilty and 96 innocent subjects. Half of the innocent subjects and half of the guilty subjects were told that they would receive an electric shock if they were judged guilty. Both control-question and guilty knowledge tests were administered in counterbalanced order. Only the data from the control-question will be discussed in this context. The test consisted of three presentations of nine questions; subject were allowed to discuss questions with the examiner in order to eliminate ambiguities. The numerical scoring in this study used a more limited range than other studies; each control-relevant pair was scored 1, 0, or -1 and the inconclusive range was from +2 to -2. Electrodermal activity, heart rate, and pupil size change were recorded and subjects were classified as guilty or innocent for each physiological measure independently. Only the electrodermal results will be presented, since the most correct classifications occurred with this measure, and heart rate alone has seldom been a factor in field testing. Pupillometry is not in common use anywhere in the field. Omitting the 56 inconclusives, 82% of the guilty subjects and 86% of the innocent subjects were correctly classified. The authors note that their procedures for the control-question test were not optimal because they did not combine the physiological measures to classify the subjects, and their semi-objective scoring procedure had a limited range.

The effect of physical countermeasures on the detection of deception was investigated by Honts (1982). Only the data from the 12 innocent and 12 guilty subjects using no countermeasures will be discussed. Innocent subjects knew the general nature of the crime, but were naive to its details. All subjects were told they would receive extra points applied to their final course grades if they produced a truthful outcome on the test. Respiration, electrodermal activity, and cardiovascular activity were recorded by a licensed examiner with 5 years experience. Subjects received four presentations of eight questions. Immediately after the test, the examiner was required to make an innocent/guilty/inconclusive decision based on both subjects' behavior and limited (less than 5 minutes) chart analysis. The examiner also scored the charts by semi-objective methods using an inconclusive range of from between +12 and -12. Another experienced evaluator scored the charts using the semi-objective method. Results are based on the three most productive charts. The original examiner's clinical decision correctly classified 86% of the guilty subjects and 60% of the innocent subjects, omitting the 7 inconclusives. Semi-objective scoring by the original examiner evaluator correctly classified 100% of the guilty and 67% of the innocent subjects, omitting the 11 inconclusives. Omitting inconclusive decisions, the original examiner and the blind evaluator agreed in 100% of the cases when decisions were made with semi-objective scoring.

The effect of propranolol on detection of decption was studied by Gatchel, Smith, and Kaplan (1983). Only the results from the 7 guilty and 7 innocent subjects not receiving drugs will be discussed. All subjects would receive a bonus for appearing truthful on the test. Innocent subjects were told that a mock crime had taken place but were not told its details. Blood pressure, electrodermal activity, and respiration were recorded by two professional examiners administering a nine-item control-question test. Charts were numerically scored with an inconclusive range of +5 to -5. Subjects appear to have received only one presentation of the test. Omitting the 6 inconclusives, 75% of the guilty subjects and 100% of the innocent subjects were correctly classified.

Kleinmuntz and Szucko (1982) reported on 15 innocent and 15 guilty subjects. Subjects were administered a control-question polygraph test by four examiners who were trainees in the first half of training. Tests were scored by six examiners (3 trainees with three months of experience and 3 with more experience, up to 8 years) but only one chart of each set of three or more was used for the analyses. Tests were classified on an 8-point scale with 1 being definitely truthful and 8 being definitely untruthful. When a rating of 5 or more was used to indicate deception and less than 5 indicated truthfulness, 71% of the guilty subjects and 51% of the innocent subjects were correctly classified. No inconclusive range was used. Correlations between examiner ratings and actual guilt/innocence ranged from .02 to .43. Experience of the examiners scoring the tests did not influence the results.

Waid, Orne, and Wilson (1979) reported results on 15 innocent and 15 guilty subjects. This study did not use a mock crime. Rather, guilty subjects learned six code words during timed interpolated tasks. Innocent subjects performed the same tasks but learned no words. Innocent subjects were told it was often difficult to prove one's innocence on a polygraph test and, the authors note, care was taken to involve the innocent subjects in the task. Guilty subjects were told that highly mature and intelligent people could deceive the examiner. A professional polygraph examiner administered several types of polygraph tests. The first test consisted of three relevant and two control questions presented twice. Between presentations, subjects were questioned about their answers and received a stimulus test. Subjects were classified as deceptive if the response to any of the three critical questions was larger than the response to the control questions; thus, this study used no inconclusive range. Only skin conductance was used to classify the subjects. Eighty percent of the innocent and 80% of the guilty subjects were correctly classified on each test presentation.

Waid, Orne, and Orne (1981) used a similar situation to investigate detection of deception with 34 innocent and 40 guilty subjects. The polygraph test in this study consisted of 3 presentaions of 9 relevant questions, 8 control questions and 5 irrelevant qustions and was administered by a professional polygraph examiner. Different physiological measures were recorded and classification of guilty or innocent was done for individual physiological measures. The best results were obtained for skin conductance. Subjects were classified as deceptive if the average electrodermal response to the relevant questions was larger than the average electrodermal response to the control questions and were classified as innocent if the opposite relationship occurred; thus, no inconclusive range was used in this study. Seventy-three percent of the guilty subjects and 76.5% of the innocent subjects were correctly classified. This study also administered guilty knowledge tests after the control-question procedure; these results will be discussed later.

Widacki and Horvath (1982) compared the polygraph with fingerprints, hand-writing specimens, and an eyewitnesses identifying persons from full-faced photographs in solving 20 mock-crimes. Subjects were divided into 20 groups of four people. In each group, three subjects were innocent and one subject was guilty. Each guilty subject was involved in an independent but similar case. The guilty subject took an envelope to a specific building, gave it to a specific person, and received a small parcel containing a cosmetic. Upon receiving the parcel, he signed the receipt with a fictitious name. Polygraph examiners made subjective decisions of guilty or innocence from a polygraph test using Reid control-question procedures and recording respiration, cardiovascular activity, and electrodermal activity. The examiner tested each group of four before making a decision about who was guilty, Using the polygraph, 18 of the 20 cases were solved (there was one error and one inconclusive decision). Thus, omitting inconclusives, 95% of the cases were solved. Handwriting and fingerprinting also were accurate although there were many inconclusive decisions with fingerprinting. The eyewitness identification results were very poor.

Barland (1981) is the only study to use control-question test in a mock screening situation. Polygraph tests were administered by three experienced examiners and respiration, electrodermal activity and cardiovascular activity were recorded.

Subjects initially supplied biographical information which was verified by a background investigation. Thirty subjects then supplied false biographical information and 26 subjects supplied accurate biographical information to the polygraph examiner. The polygraph test consisted of a minimum of three charts of thirteen questions. If no decision could be made, additional charts were run with a maximum of six charts. The examiner was not allowed to interrogate the subject. Three methods were used to evaluate the charts - the zone method, the greatest control method, and a relevant-irrelevant method. The data for the relevant-irrelevant method will be presented in a subsequent section. The zone method is similar to the method used is the previously cited control question laboratory studies. Each control-relevant pair was scored from +3 and -3 and summed; scores between +3 and -3 were inconclusive. The greatest control method used the same procedure except that the relevant questions were evaluated against the one control question with the largest reaction.

When subjects were classified deceptive or non-deceptive (irrespective of whether the specific question was identified), omitting the 9 inconclusives, 81% of the guilty and 76% of the innocent were correctly classified with the zone method. With the greatest control method, omitting the 10 inconclusives, 68% of the guilty and 83% of the innocent were correctly classifed. There were 250 truthful questions and 30 deceptive questions (each deceptive subject lied to 1 question and answered the remaining questions truthfully). Omitting inconclusives, the zone method correctly identified 91% of the nondeceptive questions and 63% of the deceptive questions, whereas the greatest control method correctly identified 54% of the deceptive questions and 97% of the nondeceptive questions.

The laboratory studies of control-question techniques report a range of correct classification figures for guilty and innocent subjects. Most studies report that from 85% to 100% of the guilty subjects are correctly classified. Results for innocent subjects are much more variable. Few of the studies used professional examiners. However, most of the other studies used graduate students under the supervision of psychophysiologists who were well-versed in psychophysiological recording techniques, but not always well-versed in polygraph technique formats and other details. The lowest correct classification rates for innocent subjects are reported by two studies using student examiners (Kleinmuntz and Szucko, 1982; Hammond, 1980). The Kleinmuntz and Szucko study also classified subjects from review of only one polygraph chart out of each set of three or more. Other studies (Waid et al., 1979; 1981; Bradley and Janisse, 1982) classified subjects as guilty or innocent by using each physiological measure independently. It is well-known that all people do not respond in the same physiological system (Engel, 1960; Garwood, Engel, and Capriotti, 1982), and higher correct classification rates would likely be found if subjects were classified from several psychophysiological measures as is done in field studies. For example, in a Japanese study (Ohnishi, Matsuno, Arasuna, and Suzuki, 1976), the detection rate for breathing was 46% and for electrodermal was 72%. When combined, the detection rate rose to 92%. The possible importance of another variable should be considered. In most of the studies, innocent subjects knew that a crime had been committed but were naive to its details. In the Hammond, (1980) study, however, innocent subjects heard the same tape that guilty subjects heard and thus, knew all the details of the crime. The subjects in the Barland and Raskin (1975) study also knew the details of the crime and this study reported the lowest correct classification figures of the studies by Raskin and colleagues. However, it appears that subjects in the Raskin and Hare (1978) study also knew the details of the crime (although details are minimal) and this study reported high correct classification figures. This study also used more sophisticated procedures than the earlier Raskin studies. The effect of knowledge of crime details by innocent subjects on classification accuracy certainly deserves futher consideration.

Several interpretations of these laboratory studies of control question technique studies are possible. In the worst case, the range of accuracy in supporting truthfulness is 0 to 100%, and the range of detecting deception is 71% to 100%. If those cases conducted by student examiners are removed from consideration then, the range for truthfulness improves to 71% to 100%, and the range for detecting deception is 73% to 100%. If the weighted average for all of the studies is used, the truthful rate is 77.1% and the deceptive rate is 81.3%. If the cases done by students are removed; the truthful rate is 81.2% and the deceptive rate is 81.9%. However, weighted averages presume a similarity in the research methods, which was not always the case and these figures should not be cited as reflecting the percentage of guilty and innocent people the polygraph correctly classifies. One conclusion is clear, the closer the research approximates field conditions by using field techniques, field instruments, trained field examiners, and the standard field methods for chart analysis, the higher the accuracy.

2.3.2 Control-Question Test - Reliability

A few of the studies investigated the relationship between the decisions of the original examiner and those of an independent evaluator. All of these studies used numerical field scoring techniques and examiner decisions were not based on subject behavior. The procedures of each of the studies investigating reliability were discussed in the previous section.

All of the studies demonstrate that numerical field scoring techniques are very reliable. Barland and Raskin (1975) reported that the correlations for the numerical scores of pairings by examiners (one original and five additional) ranged from .75 to .95 (mean = .86). Of the 1080 pairwise comparisons, examiners agreed on 98% of the cases when inconclusive decisions were eliminated. Podlesny and Raskin (1978) reported a correlation of .97 between the numerical scores of the original examiner and one additional examiner, who had not observed the test. When both examiners had made decisions, there was agreement in 100% of the cases. Honts (1982) reported that the numerical scores of the original examiner and a blind evaluator had a correlation of .88 and that there was 100% agreement when both examiners had made decisions. Hammond reports that the correlation for student examiners' numerical scores and expert examiner's numerical scores were correlated

.64 for the innocent condition and .61 for the guilty condition. It should be noted that these correlations are computed for the guilty and innocent conditions separately. If the correlation between the two examiners' numerical scores was computed across all subjects, the correlation would be very high.

2.3.3 Relevant-Irrelevant Technique - Criterion Validity

Only a few laboratory studies have used relevant-irrelevant techniques in the detection of deception. The chapter on Utility contains a description of one of these techniques. The studies vary considerably in their procedures.

Blum and Osterloh (1968) presented data on the ability of the relevant-irrelevant technique to detect false information in stories involving crimes in a laboratory situation. Subjects were police informants who had previously given information on criminal cases to local or federal agencies. It should be recognized that when informants are talking to the police their lives may be in danger; thus, subject arousal in this study may have been high. The situation was structured so that some subjects told completely true stories (n = 9), some told partially false stories (n = 7), and some told completely false stories (n = 4). True stories were those that had been told on a previous occasion and had withstood the scrutiny of investigation. Partially false stories were true stories that had been told in the past, but with some items changed. Totally false stories were invented, but contained credible information.

Three professional polygraph examiners conducted the tests. The authors note that each story provided from five to eight relevant questions, but do not give details of the polygraph test other than it took two hours. Physiological measures used are not mentioned; however, since the examiners used a three-channel Stoelting polygraph, presumably electrodermal activity, respiration, and cardiovascular activity were recorded. Examiner decision was a clinical judgment of truth or deception based on a scrutiny of the charts.

The examiners were able to correctly categorize informants telling totally true, totally false, and partially false stories in 100% of the cases. There was some error in classifying the 42 deceptive questions and 64 truthful questions. Ninety-three percent of the deceptive questions and 98% of the truthful questions were correctly classified.

Similiar results were obtained by Correa and Adams (1981) who used the relevant-irrelevant technique in a mock pre-employment screening session. Subjects initially completed a Preemployment Data Sheet and nine items were selected. On the subsequent polygraph test, the 20 designated deceptive subjects lied regarding these items and the 20 designated truthful subjects answered questions about them truthfully. Motivation also was systematically varied with certain subjects competing for a $25 bonus based on their performance. The examiner's training and experience was not mentioned. The polygraph test consisted of three series, each series containing 32 questions about the Preemployment Data Sheet with 3 of the potential lie questions in each series. Subjects were questioned between charts about any questions where the response to the relevant question was larger than the response to the irrelevant questions. These questions were rephrased and inserted at the beginning of the next series. Electrodermal activity, respiration and cardiovascular activity were recorded, and examiner decision was a subjective judgment of truth or deception.

All of the subjects were correctly classified as lying or telling the truth. Accuracy was not as high for individual lies. Eighty-eight percent of the lies in the lying motivated and 79% of the lies in the lying unmotivated were correctly identified.

The Barland (1981) study discussed earlier, used a relevant-irrelevant evaluation procedure in addition to two numerical scoring methods to detect false biographical information. It should be noted that the polygraph test was a control-question test format, not relevant-irrelevant. There were 30 deceptive and 26 truthful subjects with each guilty subject responding deceptively to one of five questions. Contrary to Blum and Osterloh (1968), and Correa and Adams (1981), the examiner was not allowed to question subjects between charts. Omitting inconclusives, 86% of the deceptive and 76% of the truthful subjects were correctly identified, as compared to 68% and 83% respectively, for the zone comparison numerical evaluation. Individual question analysis revealed that, omitting inconclusives, 69% of the deceptive and 92% of the truthful questions were correctly indentified. Of the three methods of chart analysis, the relevant-irrelevant method was the only one able to correctly detect both truthful and deceptive answers to individual questions. The fact that the relevant-irrelevant method of chart analysis was the last one to be applied may have contributed to this finding.

Heckel, Brokaw, Salzberg and Wiggins (1962) used the relevant-irrelevant technique with subjects who believed they were accused of a real theft. The study used normals, and delusional and non-delusional psychotics, but only the results from normals will be discussed. Subjects were administered a series of psychological tests during which the experimenter briefly left the room leaving his wallet on the desk. When the experimenter returned he accused the subject of taking $20 from the wallet, although nothing was actually missing. A professional polygraph examiner administered two series of an 11-item General Question Test (a type of relevant-irrelevant) with an interspaced stimulation test. Respiration, heart rate, and electrodermal activity were recorded. Charts were scored by four "experts in lie detection" who did not know the nature of the study. Each examiner made a clinical judgment of deception, no deception, or inconclusive. All of the five normals were correctly classified as non-deceptive by the four judges.

Thus, two of the studies of the relevant-irrelevant technique report that they were able to correctly classify 100% of the lying and 100% of the truth telling subjects. Correct classifications for specific truthful and deceptive questions were slightly lower. Heckel et al. (1962), using only innocent subjects, also classified all subjects correctly. One factor that may be important is subject interrogation between the polygraph charts. Barland (1981) did not allow interrogation. Questioning subjects and restructuring questions, as is typical in field usage, would be expected to increase polygraph accuracy.

2.3.4 Relevant-Irrelevant Test - Reliability

Heckel et. al (1962) appears to be the only laboratory study with information on the reliability of the relevant-irrelevant technique, but they used only innocent subjects. There was 100% agreement between the four examiners. Edel and Jacoby (1975) report a field study on reliability of the relevant-irrelevant test in which they found an agreement rate of 96% between the original examiner and independent evaluators and 94% between the independent evaluators. A detailed discussion of this research appears in an earlier section.

2.3.5 Guilty Information Tests - Criterion Validity

Both the guilty knowledge test and the peak of tension tests use information about a crime or situation that only the guilty person would know. The techniques are described in the Chapter on Utility. The critical difference between the tests is item placement. In the guilty knowledge test the guilty information item is randomly placed among the alternatives. In the peak of tension test the item and alternatvies are placed in a specified sequence made known to the suspect. In both formats, the innocent suspect does not know which item reveals guilty knowledge.

All of the studies investigating the guilty knowledge test have been laboratory studies. Professional polygraph examiners have rarely been used, and electrodermal activity frequently is the only physiological response recorded. Several studies have used the specific guilty knowledge test procedure of Lykken (1959). Several multiple choice questions are administered. Each question contains one critical item (information known by guilty but not by innocent people) and several similar, but not relevant, alternatives. The position of the relevant alternative to each question is randomly determined. Each question is scored, 2, 1, or 0 depending on the size of the response to the critical information in relation to the size of the response to the other items. The first alternative presented during testing is not scored to reduce the effect of an orienting response. A question is scored 2 when the largest response occurs to the critical alternative and a 1 when the second largest response occurs to the critical alternative. All other possibilities are scored 0. Scores are summed across questions with those above a certain level indicating deception and those below a certain level indicating truthfulness. There is no inconclusive range.

Lykken (1959) reported on subjects guilty of two mock crimes, a murder and a theft (n = 13), subjects guilty of only one crime, either the murder (n = 12) or the theft (n = 12), and subjects innocent of both crimes (n = 12). Subjects were told they would receive an electric shock if any of their responses indicated deception but really received random shocks. The guilty knowledge test consisted of two lists of six multiple choice questions, one for the murder and one for the theft. The number of alternatives to each question averaged 4.67 in the murder list and 5 in the theft list. A score over 6 indicated deception and a score of 6 or less indicated innocence. Subjects made no verbal response to the questions. These procedures correctly classified 100% of the innocent, 100% of the subjects committing only the theft, 92% of the subjects guilty of murder, and 69% of the subjects involved in both crimes. Thus, the only errors involved calling the guilty innocent. Lykken (1960) obtained 100% detection when he used the guilty knowledge test to match subjects with their biographical information in an experiment where subjects were taught how to defeat the test. Results will not be further discussed since the study used a special sample.

Davidson (1968) reported high correct classification of innocent and guilty subjects in a mock crime situation with a guilty knowledge test consisting of 6 multiple-choice questions each with five alternatives. Apparently the questions were presented only once. Forty-eight students were divided into groups of four with each group containing three thieves and one innocent subject. Each group participated in a theft of money from a different victim with the thieves in each group personally planning the details of the crime. The situation for each group was structured so that one thief tried but failed, one thief had no opportunity to attempt the crime, and one committed the crime. Only the thieves that completed the crime were considered guilty so there were 12 guilty and 36 innocent subjects. Motivation also was varied with the group of guilty subjects receiving variable amounts of money for deceiving the examiner. Examiner decision was based on electrodermal activity scored by the method devised by Lykken (1959) with a score of 6 or less indicating innocence and greater than 6 indicating guilt. Subjects made no verbal response to the questions. Ninety-two percent of the guilty subjects and 100% of the innocent subjects were correctly classified.

Podlesny and Raskin (1978) used the guilty knowledge test with 10 innocent and 10 guilty subjects in a mock crime situation. The test consisted of one presentation of 5 questions, each with 6 alternatives. The test was scored using the Lykken (1959) procedure and electrodermal activity was the physiological measure. Scores of 6 or greater indicated deception and less than 6 indicated truthfulness. This study also investigated the effect of an inconclusive zone on the guilty knowledge test with scores of 5 and 6 considered inconclusive. Subjects were required to answer no to each alternative. One hundred percent of the innocent and 80% of the guilty were correctly classified when no inconclusive zone was used. When the inconclusive zone was used there was similar accuracy and 10% were inconclusive.

A real cheating situation was used by Balloun and Holmes (1979) to investigate the guilty knowledge test in the detection of deception. Subjects were completing a bogus intelligence information test along with two confederates as part of a laboratory situation. Students were encouraged to do well on the test and told if their performance was poor they would have to meet with a panel of psychologists. One of the confederates urged the subjects to cheat by supplying a copy of the answer sheet. Nearly half of the subjects actually cheated; thus there were 16 non-cheaters and 18 cheaters. The guilty knowledge test consisted of two series of questions each series containing five relevant questions each question with five alternatives. The relevant questions contained only the information the guilty subjects could have known from the answer sheet provided by the confederate. Subjects were required to verbally respond after each alternative by repeating the alternative. The Lykken (1959) scoring system was used with scores greater than 5.5 indicating cheating and less than 5.5 indicating no cheating. When classification was based on electrodermal activity, 61% of the cheaters and 87.5% of the non-cheaters were correctly classified on series 1. On series 2, 17% of the cheaters and 94% of the non-cheaters were correctly identified. Thus, there was a significant reduction in the detection of cheaters from series 1 to series 2. Heart rate and finger pulse volume were not effective in detecting cheating.

The Bradley and Janisse (1981) study used a guilty knowledge test in addition to the control-question procedures. The control-question and guilty knowledge tests were counterbalanced. There were 96 innocent and 96 guilty subjects of a mock crime. The guilty knowledge test consisted of one presentation of 6 questions, each containing 5 alternatives. It is not clear whether subjects were required to make a response. The scoring method of Lykken (1959) was used. A score of 4 or more indicated deception and less than 4 indicated innocence. Skin resistance was the best discriminator with 89% of the innocent subjects and 59% of the guilty subjects correctly classified. Pupil size and heart rate change were not as accurate in determining guilt and innocence. The authors noted that their version of the guilty knowledge test was a weak version since it did not contain many items of information and was only presented to the subjects once.

Stern, Breen, Watanabe, and Perry (1981) had 26 innocent and 26 guilty subjects play the parts of American Embassy hostages in Iran. Guilty subjects received written instructions about their involvement in a murder plot. Innocent subjects received instructions that had some of the same relevant words as the instructions for guilty subjects, but involved no murder plot. Feedback also was manipulated but those results will not be discussed. The guilty knowledge test consisted of one presentation of 10 questions, each with 5 alternatives. Four of the ten questions were control questions. Subjects were to make no response during test presentations and responses were scored by the method of Lykken (1959). Ninety-two percent of the guilty and 89% of the innocent subjects were correctly classified.

Several studies by Waid and associates (Waid, Orne, Cook, and Orne, 1978; 1981; Waid and Orne, 1982; Waid, Orne and Wilson, 1979) used similar procedures to investigate the effect of several variables on the guilty knowledge test. Only the results for classification accuracy will be reported. Guilty subjects learned six code words during a series of tasks. Depending on the study, innocent subjects either completed a questionnaire or performed the same tasks as the guilty subjects, but learned no code words. Guilty subjects were told that highly intelligent mature individuals could deceive the examiner. Care was taken to involve innocent subjects in the task. The guilty knowledge test consisted of a variable number of presentations of a list of 24 words. There were six categories of words with each category containing four words, one word being the critical code word. A word was considered detected if the code word elicited a larger response than the three alternatives. Subjects were required to make a response in all of the studies. Waid et al. (1978) reported data from three experiments all using electrodermal activity to detect deception. Experiment 1 used 29 guilty subjects and 11 innocent subjects with two presentations of the 24 word list. Electrodermal activity was measured. Seventy-nine percent of the guilty and 73% of the innocent were correctly classified. Experiment 3 used the same procedures except that 15 innocent and 15 guilty subjects were tested and each of the 6 categories of words contained 6 words. Seventy-three percent of the guilty and 80% of the innocent were correctly classified. The 18 guilty and 10 innocent subjects in Experiment 2 were tested in groups of 3 to 7 and subjects were told they would receive a shock in the end of the test proportional in strength to the number of detected lies. The list of 24 words was presented five times. Sixty-one percent of the guilty and 90% of the innocent subjects were detected. Waid et al (1981) correctly classified 100% of the innocent subjects and 82% of the guilty subjects when electrodermal activity was the physiological measure. Cardiovascular activity and respiration were not as good at classifying subjects. This study used two presentations of the 24-item list. There were 11 innocent and 11 guilty subjects.

Waid, Orne, and Wilson (1979) correctly classified 93% of the 15 innocent subjects and 53% of the 15 guilty subjects using electrodermal activity. The list of 24 words was repeated four times. The guilty knowledge test was administered by a professional examiner after several types of polygraph tests were administered. Waid and Orne (1980) reported data from two experiments, both recording electrodermal activity. Experiment 1 used the same procedure as Experiment 2 in Waid et al. (1978). There were 18 guilty and 10 innocent subjects. Sixty-seven percent of the guilty and 90 percent of the innocent subjects were correctly classified. The 15 guilty and 15 innocent subjects in Experiment 2 were individually tested by a professional examiner and the guilty knowledge tests were preceded by other types of polygraph tests. The 24-item list was presented four times. Sixty percent of the guilty subjects and 100% of the innocent subjects were correctly classified.

Giesen and Rollison (1980) reported on college students who were selected because they reported showing high palmar sweating responses to stress. There were 20 guilty and 20 innocent subjects. Guilty subjects read and followed detailed instructions involving a murder. Innocent subjects read and followed instructions that contained some of the same information but involved no murder. The common items were used as relevant items on the subsequent guilty knowledge test. The test included 8 questions (6 relevants) each with five alternatives. Electrodermal activity was recorded and the test was scored using the procedure of Lykken (1959). Ninety-five percent of the guilty and 100% of the innocent subjects were correctly classified.

Apparently, there are few studies using the peak of tension test with both innocent and guilty people. The Waid, Orne, and Wilson (1979) study, already discussed used a peak of tension test in addition to two control-question tests and a guilty knowledge test. The peak of tension was always presented after the control question tests. Forty-seven percent of the 15 guilty subjects and 80% of the 15 innocent subjects were correctly classified. On both control-question tests, 80% of the guilty and 80% of the innocent were correctly classified, whereas with the guilty knowledge knowledge test 53% of the guilty and 93% of the innocent were correctly classified. However, the tests were administered in the same order to all subjects and this would be expected to influence the results.

There are a number of other studies using the guilty knowledge test and peak of tension tests to detect information (Gustafson and Orne, 1963, 1965; Miyake, 1978; Ben-Shakar, 1977; Ben-Shakhar and Lieblich, 1982; Kugelmass and Lieblich, 1968; Lieblich, Kugelmass, and Ben-Shakhar, 1970; Ohkawa, 1963; Timm, 1982; Stern et al. 1981; Kronbergerova and Dufek, 1969; Yamaoka and Suzuki, 1980; Dufek, 1969; Ohnishi, Matsuno, Arasuna, and Suzuki, 1976). These studies only use guilty subjects or subjects possessing information to be detected. Since there is no field analogue of this procedure, they will not be discussed. However, they are important in providing information on variables that influence detection of deception.

The guilty knowledge tests are consistent in demonstrating higher accuracy with innocent than guilty subjects. From 73% to 100% of the innocent subjects have been correctly identified, whereas from 53% to 95% of the guilty have been detected. It is not clear why there is such a range with guilty subjects. The number of stimulus repetitions (Balloun and Holmes, 1979), whether subjects are required to make a verbal response (Gustafson and Orne, 1965), and electrodermal lability (Waid and Orne, 1980; Giesen and Rollison, 1980) may be important. Whether the use of physiological measures in combination improves the accuracy should be investigated.

2.3.6 Guilty Information Tests - Reliability

Since guilty knowledge tests use an objective scoring system it would be expected to be highly reliable. The scoring of the peak of tension test is more subjective because there is judgment on the correspondence between maximum physiological activity and a critical item of information.

CHAPTER 3 - ANALYSIS OF RESEARCH

The previous chapter reviewed specific laboratory and field studies of the validity and reliability of lie detection. This chapter seeks to discuss some of the problems and issues of lie detection and to draw conclusions from the research literature.

3.1 ANALYSIS

Several observations can be made about the research. First, the research literature is burgeoning. There has been more scientific research conducted on lie detection in the last six years than in the previous 60 years. Second, the polygraph technique is a robust technique. Although there are numerous variables which affect its accuracy, it works better than chance in a wide range of testing situations including criminal investigations, intelligence operations, security screening, mock crimes in a laboratory environment, and even games in which a person denies what number he selected. Indeed, it is difficult to find experiments in which lie detection did not work better than chance. The technique obviously works well with many cultures because many of the studies were conducted in Poland, Israel, and Japan. Third, there is no such thing as a perfect study. Each study is flawed; sometimes in its design, often in its execution, and sometimes in the selection, analysis, and reporting of the data. Occasionally the shortcomings are so serious as to disqualify the study from serious attention. Fortunately, the various studies usually contribute to the mosaic of our understanding of the polygraph technique and the factors which affect its accuracy. Our understanding of these variables has expanded rapidly within the last five to ten years with the accelerating pace of research.

Nonetheless, it is difficult to estimate the precise accuracy of the polygraph technique in everyday applications because of the numer of variables involved. There are a variety of polygraph applications, each with its peculiar problems and issues: criminal investigation, intelligence operations, pre-employment screening, and aperiodic security screening of current employees. Within each of these applications are many subcategories. Polygraph accuracy is probably different for each of these settings; however, some general comments about error rates can be made.

There is evidence to suggest that control question tests may be more accurate in detecting the deception of the guilty person than in verifying the truthfulness of the innocent person; that is, given equal numbers of guilty and innocent persons, more inconclusive results may occur with the innocent persons, and the number of false positives may outnumber the number of false negatives. Studies of this type have primarily found either more false positives than false negatives or essentially no difference in the false positive and false negative error rate. There are a few studies that found fewer false positives (Reid & Horvath, 1971; and Bersh 1969). Since the variables determining whether or not a study showed differential error rates have not been determined, it is unknown whether a preponderance of false positive errors is characteristic of field polygraph usage.

Additional evidence that the guilty may be easier to detect was reported by Barland & Raskin (1975). They found that the absolute values of scores from guilty subjects in a mock crime were more extreme than the scores from the innocent subjects, indicating that the size of the reactions of the guilty subjects on the relevant questions were larger than those of the innocent subjects on the control questions. They also found that on numerically scored control question tests of criminal suspects, the scores of the suspects called deceptive by the examiner were more extreme than the scores of the suspects called truthful by the examiner (Barland & Raskin, 1976). Not all of those decisions could be verified, however.

It is of interest to note that in two of the studies reporting a preponderance of false positives (Horvath, 1977; Kleinmuntz and Szucko, 1982), the errors occurred during the blind analysis of the polygraph charts. When verified cases were selected for study, no known errors were found regarding the polygraph tests as conducted by the original examiners.* This suggests the possibility that the clinical judgment of the examiner who is able to observe the subject's demeanor throughout the test may serve as a safeguard against false positive errors that may occur when the polygraph charts are interpreted in isolation from nonpolygraphic sources of data. More research is needed to clarify the relationship between false positive and false negative errors with the control question test.

Peak of tension tests and especially the guilty knowledge test incorporate an extremely effective safeguard against false positive errors--the innocent person cannot determine which question is the critical question, and therefore cannot consistently react to it regardless of how nervous or fearful he is. Thus, with the peak of tension and guilty knowledge tests, virtually all errors are false negative errors. However, these tests can rarely be used in many applications of the polygraph.

The base rates of truthfulness and deception within the specific population being examined can have effects on the proportion of false positive and false negative errors. The confidence to be placed in a given test outcome will vary according to the proportion of false positive and false negative results compared to the base rates of truthfulness and deception. As the base rate for deception decreases there is probably an increase in the number of false negative errors and a decrease in the number of false positive errors. It should be recognized, even if there is doubt about a particular polygraph test outcome, the test can nonetheless be useful. If, before the test, there is 1 chance in 1,000 that a person is deceptive, but afterwards there is a 50/50 chance the person is deceptive, the test has been helpful. This is particularly important to consider since the polygraph is a supplement to other investigative methods.

Another variable affecting the error rate is the type of issue to be resolved. The polygraph is believed to be most accurate when the subject denies having committed a specific physical act, such as a theft. Although there is, as yet, no research on this matter, several theories predict that the accuracy is reduced when the issue is vague or ambiguous, such as when the subject admits having shot the victim, but claims he had only intended to frighten, not kill, him. The polygraph issue is then one of intent, not the act. The extent to which the accuracy is reduced depends upon a number of factors unique to each case, such as the nature of the issue, the psychological makeup of the person being examined, the length of time elapsed since the event occurred, and the skill and experience of the examiner in formulating and defining the precise test questions.

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* Personal Communication, Frank Horvath, 1983; Personal Communication, Julien Szucko, 1983.

The polygraph is said to be most accurate when only one issue is to be resolved. When more than one issue must be included in the test, as often happens in many intelligence applications and in preemployment screening, the accuracy would, presumably, be less. However, in the absence of extensive research on this issue, it is not known whether the accuracy is reduced. The Correa & Adams (1981), Blum and Osterloh (1968), and the Barland (1981) studies suggest that there may be little if any decline in the accuracy of gross categorization of "entirely truthful" versus "deceptive to one or more questions"; and that the decline in accuracy occurs only in decisions regarding the precise question(s) to which the person was deceptive.

It is clear that the examiner's level of experience affects the accuracy of decisions. It may be that once a certain threshold has been reached additional experience results in only slight increases in accuracy, due to the inherent robustness of the technique. However, the critical level of experience has not been determined. Within the government, the closely supervised internship and the quality control review process assists the intern in conducting his examinations properly.

The approach to decision making (clinical versus numerical analysis of polygraph charts) undoubtedly affects the accuracy of the decisions, but this factor has not been adequately researched. It may be that the clinical approach may be important in safegaurding against false positive errors while the numerical evaluation approach minimizes false negative errors. If this proves to be true, then a combination of these approaches should minimize both types of error. It would be a useful experiment to employ the clinical approach followed by a quality control review which incorporates numerical analysis of the charts to see if the combination is more effective than either approach alone. There is some evidence suggesting that when several polygraph examiners concur in the interpretation of the polygraph charts, the accuracy of the group decisions is higher than any individual opinion (Barland and Raskin, 1975). More research is needed to determine the most effective approach to decision making.

The number of polygraph charts obtained from a given subject may be related to the accuracy of the decisions. Generally, the more physiological information available to the examiner the more accurate his decisions are (Barland & Raskin, 1976; Leiblich, Naftali, Shmueli & Kugelmas 1974). Beijk (1980) reported increasing accuracy rates on a card test with increasing numbers of polygraph charts. Studies reporting lower accuracy rates occur when the reviewers saw only one chart or only used a portion of the information available from the charts (Kleinmuntz & Szucko, 1982; Bradley & Janisse, 1981). The Kleinmuntz & Szucko study reported data from an experiment where the reviewers saw only one polygraph chart of a set, and had one of the lowest accuracy rates reported in any study. Multiple charts are taken in all federal applications of the polygraph.

One of the complicating factors in trying to use the available research to estimate the accuracy of the polygraph in real life stiuations is the fact that many laboratory studies are conducted by researchers who have not been trained in the field uses of the polygraph. Among the many differences that lack of field training generates is the relative lack of interaction between the researcher and the subject. There are many things that can cause responses to appear to indicate deception on the polygraph charts. These include extraneous noises, visual distractions, emotional complexes associated with some word in a question, and even random thoughts. The accuracy of the polygraph technique depends largely upon the ability of the examiner to control the testing environment so that extraneous sources of reactions are eliminated. "Lie detection" can properly be thought of as an inference based upon a process of elimination. One important way in which the field examiner determines whether a subject may be reacting to a question for some reason other than deception is to talk to the subject between charts to find out what was going through his mind on various questions. The questions are then be restructured based on the information the subject provides. This procedure would almost certainly reduce the number of innocent subjects classified as deceptive in laboratory tests. For example, Correa and Adams (1981) questioned the subject during the procedures and rephrased the questions based on the subject's replies. That study reported 100% accuracy in classifying the innocent and guilty subjects.

In addition to polygraph accuracy, polygraph utility also is important. Utility refers to the ability of a test or procedure to produce the results desired. If 100 tests are administered, it is desired that 100 correct decisions be obtained. Anthing which reduces the number of desired results reduces the utility of the test.

As applied to the polygraph, utility has several aspects. In one sense it refers to the ability of the polygraph examiner to obtain useful information from a subject as a result of the test regardless of the actual accuracy of the polygraph in terms of chart interpretation. During the interview conducted by the examiner immediately prior to attaching the subject to the polygraph, many subjects confess or reveal information they had not mentioned to previous investigators. The pyschological "demand characteristics" of the polygraph situation are very powerful and should not be underestimated. Thus, even if the polygraph were not at all accurate, it would have a certain utility as long as people believed that it worked.

A second aspect of utility relates to the inconclusive rate. Even the most accurate test has diminishing utility as the inconclusive rate increases. Fingerprints, for example, have limited utility in investigations despite their extremely high accuracy because only occasionally can identifiable prints be recovered. In reference to the polygraph, it is necessary to distinguish between its utility and its accuracy. Utility in this respect refers to the total number of correct decisions out of the total number of cases; that is, the total number of cases minus both the inconclusive results and the errors. Accuracy, on the other hand, refers to the number of correct decisions out of the total number of decisions, after the inconclusive results have been set aside.

It is not possible to estimate the accuracy of the polygraph in DoD, at present, for the reasons discussed in this chapter. A great deal of government polygraph usage involves screening, but there is little evidence on the accuracy of the polygraph in screening situations. Two laboratory studies, Blum and Osterloh (1968) and Correa and Adams (1981) used procedures that are similar to the screening situation. Both correctly classified 100% of the innocent and 100% of the guilty subjects. Although there are not enough data to make definite statements about polygraph accuracy in screening, it can be said that there is no evidence to indicate that large numbers of people are misclassified.

3.2 The Bersh Field Validation Study

There is more evidence on potential accuracy in DoD criminal applications. The Bersh (1969) field validation study was designed to estimate the accuracy of the polygraph technique in DoD criminal investigations.

This study found that in criminal investigations there was an agreement rate of 90% for guilty subjects and 94% for innocent subjects between the decisions of military examiners and the criterion of unanimous decisions of JAG attorneys who had reviewed the investigative dossiers minus the polygraph outcome. However, since the examiners knew some of the case information which was later forwarded to the panel of attorneys, these figures should probably be considered to be the upper limit for the accuracy of the polygraph technique in military criminal investigations in the early 1960's. Since that time the accuracy may have increased somewhat due to the higher selection standards, more thorough training (both the initial polygraph training and periodic seminars on advanced topics), and the establishment of quality control offices which review every polygraph case. For all of these reasons, it is likely that the quality and accuracy of federal polygraph examiners is higher than the polygraph profession generally.

3.3 Laboratory Experiments with Mock Crimes

Several laboratory studies have utilized numerically scored control question tests in mock crime situations with the physiological measures typical of the field. Thus, these studies use procedures which are similar to DoD procedures (Barland and Raskin, 1975; Rovner et al., 1978; Raskin and Hare, 1978; Podlesny and Raskin, 1978; Honts, 1982; Gatchel et al., 1983; Hammond, 1980). Bradley and Janisse (1981) used numerical scoring, but their scoring system differs from that used at DoD and they classified subjects as truthful or deceptive from only one physiological channel. Those experimental studies which used other test formats, such as the guilty knowledge test, or in which subjects were instructed to engage in countermeasures, were excluded from the data in order to make the results as applicable as possible to use the polygraph within DoD. Only those studies using numerical scoring are of interest because numerical scoring currently is used in DoD criminal investigations. The decisions of the original examiner were used for all studies except Rovner et al. (1978) because this study only reported results for a blind evaluation.

These studies correctly classify from 75% to 100% of the guilty subjects and from 57% to 100% of the innocent subjects. The mean correct classification rate weighed for number of subjects in the study is 90% for guilty subjects and 80% for innocent subjects.

There are numerous differences between mock crimes conducted in laboratories and real crimes. Some of these differences, such as a lower level of emotional involvement, probably made it harder to detect deception in the laboratory, whereas other differences, such as a greater homogeneity of the research subjects in terms of age, IQ, criminal history, etc., probably tend to increase the accuracy of laboratory results by permitting the polygraph procedure to be optimized for the subject population. Some of the more recent research has employed subjects recruited off the street or has used convicted criminals (e.g. Podlesny & Raskin, 1978; Raskin & Hare, 1978).

3.4 Experience of Professional Investigators and Quality Control Personnel

Since there is a limited amount of research data, it is important to consider the experience of professional investigators and quality control personnel in assessing field polygraph accuracy. The polygraph has been used as a lie detector in hundreds of thousands of criminal investigations since its inception over 60 years ago. Police detectives and other professional investigators have worked closely with polygraph examiners, and have continued their investigations of countless cases after learning of the polygraph results. By their nature and training, investigators tend to be skeptical pragmatists. Yet, they rely upon the polygraph.

One of the functions of the various federal quality control offices is to follow up the cases, maintain records, and investigate causes of polygraph errors. Although it is impossible for all polygraph errors to be detected, the number of known errors in federally-administered polygraph examinations of criminal suspects is less than 1% of all polygraph examinations. One reason why the actual number of errors is unknown is that military prosecutors give a great deal of weight to polygraph results when deciding whether to proceed with court martial proceedings. It is rare for a person who has been found truthful by a federal polygraph examiner to be prosecuted. Consequently, false negative errors are rarely found. On the other hand, instances in which the subject is found deceptive are almost always investigated further and are usually prosecuted. Thus, the probability of false positive errors being detected by additional investigation is much greater. It is possible that the actual number of combined errors may be four or five times the number of known errors. If that presumption is true, then the polygraph in criminal investigations is almost certainly more than 90% accurate, and it is probably about 95% accurate.

3.5 Summary

Thus, the Bersh study, experience of investigators and quality control personnel, and mock crime laboratory studies give different estimates of the accuracy of control question tests in criminal investigations, ranging from about 80% to 95%. Until additional research is conducted we do not feel comfortable in specifying a precise figure for polygraph accuracy in DoD criminal investigations. Additional research also is needed to draw precise conclusions about polygraph accuracy for other DoD applications where different techniques are used, such as personnel screening and intelligence investigations. We do not know whether the application has an effect on the accuracy of a technique. It is noted, however, that there are no data suggesting that the various polygraph techniques and applications in DoD have high false positive or high false negative error rates.

Chapter 4 - Summaries of Research

4.1 Field Abstracts

4.1.1 Gordan H. Barland and David C. Raskin (1976)

"Validity and Reliability of Polygraph Examinations of Criminal Suspects." Report No. 76-1, Contract 75-NI-99-0001. National Institute of Law Enforcement and Criminal Justice; Department of Psychology, University of Utah, Salt Lake City, Utah, March 30, 1976.

Procedure

One hundred-two criminal suspects (92 independent cases) were subjects in a study to determine the validity and reliability of the polygraph in a field setting. Most of the subjects were under arrest at the time of the examinations. No victims, witnesses, or persons involved in civil suits were included.

Eighty-four males and 18 females (age range, 15 to 54 years; education range 3 to 16 years) received polygraph tests where abdominal or thoracic respiration, skin resistance, and cardiovascular activity were recorded. Location of test and type of instrument varied with the subjects. It is noted that 34 subjects were tested with a polygraph in poor condition. Experience of the polygraph examiner is not discussed.

During a pretest interview the examiner obtained a background history, administered several scales from the MMPI, determined what the subject knew about the crime, and formulated the test questions with the subject. The federal modification of Backster zone-comparison control question test was used in 101 cases. One case used the U.S. Army 1966 version of the Reid technique. A minimum of three charts (10-13 questions per chart) were run; if no decision was made, additional charts were run up to a maximum of six charts. Charts were numerically evaluated at time of test by scoring each of three pairs of relevant and control questions from +3 to -3 based on magnitude of the differences. Truthful was indicated by a total test score of +6 or greater, deception by -6 or lower, and inconclusive between +5 and -5. In some cases the examiner's decision was based on more information than the numerical evaluation of record.

Each case was independently reviewed by a panel with no knowledge of the polygraph result. Evidence on each case was collected by untrained investigators and summarized by technicians with no knowledge of the case. All available documentation was included except polygraph and judicial outcome. If a subject confessed as a result of the polygraph test, the confession was reported but the source of the confession was not. If the subject had pleaded guilty, the circumstances of the guilty plea were included. The panel consisted of two prosecuting attorneys, one judge, and two defense attorneys. Panelists were to disregard legal technicalities and rules of evidence, and judge guilt and innocence based on the facts. Each member independently reviewed each case and made one of five possible decisions; (1) definitely innocent; (2) probably innocent; (3) undecided; (4) probably guilty; (5) definitely guilty. These decisions were converted to numbers on a 5- point scale by the examiners. Scores were summed for each case and total panel score was compared to polygraph outcome.

The following table demonstrates the agreement between panel decision and examiner decision when +1 or greater panel score reflected innocence, -1 or lower panel score reflected guilt, and a 0 panel score reflected inconclusive. The ten examinations that were not independent were eliminated in this analysis.

		Panel Decision		
		Guilty	Innocent	Inconclusive
Examiner Decision	Deceptive	47	14	5
	Truthful	3	6	4
	Inconclusive	6	5	2

Omitting inconclusives there was agreement in 76% of the cases. Increasing the panel score required for agreement increased rate of agreement (also note there would be an increase in inconclusives) and it fluctuated around 87%.

The polygraph examiner's judgment also was compared with various other types of criteria. The following results were obtained when panel decisions were based on a majority of the panelists making a decision in the same direction.

		Panel Decision		
		Guilty	Innocent	Inconclusive
Examiner Decision	Deceptive	43	9	14
	Truthful	0	5	8
	Inconclusive	4	3	6

When panel results were compared to blind numerical evaluation of charts similar results were obtained.

Polygraph examiner's decisions also were compared to judicial outcome in 41 cases where the jury did not know a polygraph test had taken place and are as follows:

		Judicial Outcome	
		Guilty	Innocent
Examiner Decision	Deceptive	30	6
	Truthful	0	1
	Inconclusive	3	1

Results were similar with blind numerical chart analysis.

4.1.2 Akiva Ben-Ishai (1962)

"Some Remarks on Polygraph Research." Paper presented at the Ninth Annual Meeting of the American Academy of Polygraph Examiners, Chicago, Illinois, August 1962.

Procedure 1

A psychology student, assigned to the Israeli Police Department, determined the relationship between polygraph examiner decision and case outcome for those cases whose results had been determined by other means. It should be noted that the description of the procedure is incomplete.

Results

The psychology student's evaluation of guilt or innocence from the records was consistent with the polygraph results in 94% of the cases. It is not possible to determine from the presented data the percentage of guilty subjects and the percentage of innocent subjects correctly classified.

Procedure 2

The student was given all the charts from ten criminal cases in which the guilt or innocence had been definitely established by independent means. The student measured the amplitude of skin resistance responses to each of the control questions and to each of the relevant questions. He then averaged all the responses to the control questions and averaged all the responses to the relevant questions. If the average amplitude of the control question responses was greater than the average amplitude of the relevant question responses, the subject was said to be nondeceptive. If the average amplitude of the responses to the relevant questions was greater than that of the control questions, the subject was said to be deceptive. The chart analysis did not include respiration or cardiovascular recordings, and was limited to this unusual method of averaging electrodermal responses for analysis.

Results

All ten subjects were correctly classified as guilty or innocent.

4.1.3 Philip J. Bersh (1969)

"A Validation Study of Polygraph Examiner Judgments." Journal of Applied Psychology 53 (1969): 399-403.

This was a report of research for the Department of Defense Joint Services Group on Lie Detection Research, United States Army Behavioral Science Research Laboratory, Washington, D.C., April 1968.

Procedure

The lie detection judgments of polygraph examiners in criminal investigations conducted by the military services were validated against unanimous guilt-innocence decisions by a panel of four Judge Advocate General (JAG) attorneys. The panel of lawyers had access to the complete investigation file, except that all references to the polygraph examinations were removed. Cases were selected at random from those conducted from 1963 to 1966 with some restrictions. Cases involving confession were ruled out because some polygraph examiners could have made their judgment of deception after the subject had confessed. No cases where the examiner reported inconclusive results were included. Cases were selected so that there were about an equal number of General Question tests and Zone of Comparison tests, and with each type, an equal number of judgments of deception indicated and no deception indicated. Examiners did have access to a subject's case file, but the authors maintain the file was not complete and that polygraph tests are only given when there is real doubt about a person's guilt or innocence. The polygraph examiners' judgments were subjective decisions regarding subjects' guilt or innocence.

A total of 326 case files were submitted to the panel. Each member of the panel was initially required to judge whether a file contained sufficient evidence to warrant a decision of guilt or innocence. Files with inadequate evidence were eliminated from further consideration, and 157 remained in which all four decisions were unanimous. The attorneys were given explicit instructions to disregard all legal technicalities and to judge each case solely on the evidence contained in the file.

Results

Results are presented in the following table (cases are those involving unanimous panel judgements):

		Panel Judgment			
		General Question Test		Zone Comparison Test	
		Guilty	Innocent	Guilty	Innocent
Examiner Judgment	Guilty	31	4	34	3
	Innocent	1	32	4	48

The examiner and the panel agreed in 92% of the cases. When polygraph examiner judgment was compared with panel judgment for cases where a majority of the panel agreed on guilt or innocence (instead of unanimous decisions), there was agreement by the examiner and the panel in 75% of the cases.

4.1.6 M. E. Bitterman and F. L. Marcuse (1947)

"Cardiovascular Responses of Innocent Persons to Criminal Interrogation." *American Journal of Psychology* 60 (1947) 407-412.

Procedure

A theft of $100.00 took place in one of the rooms of a campus dormitory at Cornell University. It was recognized that the theft could have been committed either by one of the men in the dormitory or an outsider. Two professors of psychology who had no polygraph training but did have some books and articles on the topic, conducted polygraph examinations of the 81 men who lived in the dormitory, as an aid to the police investigation. Respiration and cardiovascular activity were recorded. They were unable to devise a method to evaluate the pneumograph pattern. The first stage of testing used a fixed sequence relevant-irrelevant technique of seven questions. It opened with two irrelevant questions, then a relevant question, an irrelevant question, and three relevant questions. The last relevant question was a general one, asking the subject if he had answered all the questions truthfully. The whole pretest interview and one chart took ten minutes.

Results

Subjects were placed in 1 of 4 categories based on their responses to relevant and irrelevant questions (reliability data on this classification scheme is presented): 1) Insignificant response to all items (N=31); 2) Moderate reactions to all items (n=23); 3) Extensive reactions to all items (n=20); and 4) Larger reactions to relevant than irrelevant items (n=7). Subjects in groups 3 and 4 were retested from 1 to 5 times using relevant-irrelevant tests; with retest their patterns became similar to those of groups 1 and 2. Supplementary peak of tension tests indicated nothing significant. Thus, the authors concluded that none of the men had committed the theft.

Subsequently, their conclusion was supported by other evidence (not specified) which indicated that a person who was unavailable for examination was guilty. Thus, this study classified 100% of the innocent subjects correctly.

4.1.5 Avital Ginton, Netzer Daie, Eitan Elaad, and Gershon Ben-Shakhar (1982)

"A Method for Evaluating the Use of the Polygraph in a Real-Life Situation." Journal of Applied Psychology (1982) 67(2): 131-137.

Procedure

Twenty-one males (mean age 29.2 years) from the Israeli police participated in a study involving detection of deception in a real-life situation. Subjects were administered pencil and paper tests presented as part of a police course. The answer sheet for one of the tests had a hidden chemical page that recorded what the subject had written. The chemical page was removed, the answer sheet returned, and subjects were asked to score their own tests. Seven subjects actually changed their answers as they were scoring the test. This was determined by comparing the scored answer sheets with the answers indicated on the chemical page.

After several days subjects were told they were suspected of cheating and were offered an opportunity to take a polygraph test. It was made clear that their future could depend on test outcome. All 21 subjects initially agreed to the test; however, 1 guilty subject did not arrive for the test, 3 guilty subjects confessed, and 1 guilty and 1 innocent subject refused to take the test. Thus, 13 innocent subjects and 2 guilty subjects took the polygraph examination.

Testing was done at police laboratories by 7 interrogators with at least one and one-half years experience as professional polygraphers. Respiration, electrodermal activity, and cardiovascular activity were recorded. Each interrogation involved 3 examiners - 1 interrogator, 1 who later blindly evaluated the charts, and 1 who observed from another room. A control-question test with 9 questions, 2 relevant questions, and 2 control questions was administered. There were 3 repetitions of the 9 questions and a card test after the first series. The polygraphers did not know subject status or the proportion of guilty subjects. Two months later charts were blindly re-evaluated by 8 examiners (5 of the original examiners and 3 additional examiners). Decisions of deception and no deception were based on both global subjective judgments and a numerical field scoring technique. The numerical procedure involved scoring each relevant and control pair from +3 to -3 and summing across responses and charts. Scores between +5 and -5 were considered inconclusive. Global subjective judgments were based on different data depending on the examiner's role in each case. The blind evaluators used the polygraph charts, the observer used subject behavior, and the interrogator used both the charts and behavior.

Results

The following table presents results of subjective judgments of the 3 examiners initially involved in the polygraph testing of the 15 subjects:

		Actual	
		Guilty	Innocent
	Interrogator		
	Guilty	2	2
	Innocent	0	11
	Inconclusive	0	0
Predicted	Blind Evaluator		
	Guilty	1	3
	Innocent	1	7
	Inconclusive	0	3
	Observer (behavior only)		
	Guilty	0	2
	Innocent	2	11

The original interrogator who based his decision on polygraph charts and behavior was most accurate, correctly classifying 100% of the guilty subjects and 84.6% of innocent subjects.

Results for numerical scoring are presented in the following table:

		Actual	
		Guilty	Innocent
	Interrogator		
	Guilty	1	1
	Innocent	0	6
	Inconclusive	1	6
Predicted			
	Blind Evaluator		
	Guilty	1	1
	Innocent	0	5
	Inconclusive	1	7

Numerical scoring increased the numer of inconclusives, but did not change the accuracy of the interrogator if inconclusives are omitted. The blind evaluator did have higher accuracy with numerical scoring (omitting inconclusives). The authors note that the blind evaluator was under considerable time pressure for the subjective scoring and suggest that this factor may have influenced accuracy.

The 8 polygraphers who reanalyzed the data did so using both subjective and numerical scoring. There were 16 decisions for each type of scoring for guilty subjects (2 guilty subjects, 8 examiners) and 104 decisions for each type of scoring for innocent subjects (13 innocent subjects, 8 examiners). Results are in the following table:

		Actual	
		Guilty	Innocent
	Subjective		
	Guilty	15	18
	Innocent	1	84
	Inconclusive	0	2
Predicted			
	Numerical		
	Guilty	11	8
	Innocent	0	38
	Inconclusive	5	58

4.1.6 Eugene C. Edel and Jacob Jacoby (1975)

"Examiner Reliability in Polygraph Chart Analysis: Identification of Physiological Responses." Journal of Applied Psychology (1975) 60(5): 632-634.

Procedure

Forty randomly-selected polygraph cases from preemployment screening examinations conducted by a federal agency were used to determine reliability of polygraph chart analysis. There were 10 polygraph examiners ranging in actual interview experience from three months to ten years. Each examiner was the examiner in 4 of the cases and was a blind rater (with no knowledge of interview information) in 8 cases. Thus, each case was analyzed by 1 examiner and 2 blind raters.

The forty cases contained 2,530 relevant, irrelevant, control, and overall-truth questions. The relevant-irrelevant technique was used and several topics were covered in each examination. Examiners were required to state whether or not there was a significant physiological response in the cardiosphygmograph, electrodermal, and respiration channels to each questions, requiring 7,590 decisions. The federal agency which conducted these examinations does not report deception or no deception in screening cases. It only reports either that there are consistent, significant physiological reactions to specific relevant questions, or there are no reactions to relevent questions. Agreements between examiners and raters were based on the responses following each question in each of three recording channels. Thus, if both judges said there were significant physiological reactions to the question in the electrodermal channel, and no reactions in cardiovascular and respiratory channels, this would constitute three agreements.

Results

The percentage agreement between examiner and both raters was 96% for cardiovascular, 95% for electrodermal, and 96% for respiration, with the average agreement across physiological channels 96%. Percentage agreement between raters was 96% for cardiovascular, 91% for electrodermal, and 96% for respiration with an average agreement across channels 94%.

4.1.7 Eitan Elaad and Esther Schahar (1976)

"Polygraph Field Validity," in Israel Nachshon (ed.) "Scientific Interrogation in Criminal Investigation." Selected papers presented at the First National Conference on Scientific Interrogation in Criminal Investigation held at Bar-Ilan University, Ramat-Gan, Israel, 3-4 November 1976. Reprinted in a Special Issue of Crime and Social Deviance 6(1) (Spring-Summer 1978): 4-5.

Procedure

Of all the cases conducted by the polygraph examiners in the Scientific Interrogation Unit of the Israel Police during the years 1973 and 1974, 184 were confirmed by conviction or confession. The classification of these cases as deceptive or truthful was determined by the utilization of the polygraph.

Results

Of the 184 cases that were confirmed, there were 10 polygraph results that were inconclusive (18.4 percent). There were 6 errors (3.3 percent), 5 false negatives and 1 false positive. Eliminating the inconclusive reports, and assuming the conviction or confession was correct when there was disagreement, polygraph tests correctly classified 96.6% of the guilty subjects. The authors note that polygraph results could have influenced the confessions and convictions, the sample was not random, and false confessions and convictions could occur.

4.1.8 Robert H. Edwards (1981)

"A Survey: Reliability of Polygraph Examinations Conducted by Virginia Polygraph Examiners." Bureau of Forensic Science, Department of General Services, Commonwealth of Virginia, July 31, 1981, Richmond, Virginia, 62 pp. Reprinted in Polygraph 10(4) (December 1981): 229-272.

Procedure

The study, conducted for the Commonwealth of Virginia, involved a survey of fully licensed Virginia polygraph examiners. Twenty-four examiners of the Virginia State Police and 38 examiners with local law enforcement agencies responded (77.5% of the total law enforcement sample). The response rate for private firms was so low it will not be reported.

The survey questionnaire had six questions including questions about the total number of cases, the conclusion of each case (truthful, deceptive, inconclusive), the number of cases verified as truthful and verified as deceptive, and the number of those cases in which later information indicated the examiner was in error (false negatives, false positives). Only specific issue examinations were included.

Results

The 62 law enforcement examiners included in the survey conducted 2,433 specific issue examinations in 1980. Of these, 1,113 (45.7 percent) were reported as truthful, 983 (40.4 percent) were reported as deceptive, and 337 (13.9 percent) were reported as inconclusive. Excluding the inconclusives, 53.1 percent were reported truthful and 46.9 percent were reported deceptive.

The following table illustrates the polygraph examiners' determinations and the dispositions of the 959 cases that were verified by means such as conviction, acquittal, confessions, etc.

		Case Disposition	
		Guilty	Innocent
Examiner's Decision	Guilty	587	9
	Innocent	7	356

Thus, 98% of the cases reported by the examiner as truthful were verified as truthful and 98.5% of the cases reported by the examiner as deceptive were verified as deceptive. It should be noted that case disposition was not necessarily independent of the polygraph examiner's decision.

4.1.9 Frank Horvath (1977)

"The Effect of Selected Variables on Interpretation of Polygraph Records." *Journal of Applied Psychology* 62 (2) (1977):127-136.

Procedure

Ten field-trained polygraph examiners from law enforcement agencies (5 having more than 3 years experience and 5 having less than 3 years experience including some interns) judged a sample of polygraph records from 112 *criminal suspects* from independent cases investigated from 1969-1972. The records were sampled in stages so that there were an equal number of verified and unverified cases, truthful and deceptive subjects, and crimes against people and crimes against property. Thus, there were 8 categories and 14 sets of records in each category. Verified cases were those where a confession had been obtained and the examiners had correctly identified the subject. Unverified cases were those where there was no knowledge of ground truth. The truthful versus deceptive category was based on polygraph examiner judgment.

The examinations used a standard-control question technique with some modifications. All examinations included, in order, a pretest interview, a control question test chart, a stimulation test chart, and another control question test chart. In 48 of the 112 examinations there were additional test charts. Examiners were to decide overall subject guilt or innocence, rate on a 6-point scale confidence in their judgment, and rate on a 5-point scale the ease of interpreting each physiological measure. Electrodermal activity, cardiovascular activity, and abdominal respiration were recorded. Twenty-six subjects also had thoracic respiration recorded.

Results

Of the 1120 truth-deception judgments, 707 (63.1%) were correct and 15 (.13%) were inconclusive. An analysis of variance with within factors of verification (verified-unverified), truthfulness (truthful-deceptive), and crime type (person-property), and between factor experience (high-low) was computed. The dependent measure was percentage of correct judgments by each examiner in each category. There was no significant effect for experience. There were significant effects for the other factors including a significant verification X truthfulness X crime type interaction. The following tables demonstrate the percentage distribution in each category:

Person Crime

		Verified Cases		Unverified Cases	
		Deceptive	Truthful	Deceptive	Truthful
Examiner Judgment	Deceptive	78.6	50.0	80.0	62.1
	Truthful	21.4	50.0	20.0	37.9

Property Crime

		Verified Cases		Unverified Cases	
		Deceptive	Truthful	Deceptive	Truthful
Examiner Judgment	Deceptive	75.7	47.9	64.3	33.6
	Truthful	24.3	52.1	35.7	66.4

Comparisons also were made between records with only the basic set of three charts and those with more than the basic set. 52.5% in the former category and 71.1% in the later category were correctly classified. Consistency among examiners was .89 for verified and .85 for unverified records based on Hoyt's intraclass reliability coefficient. Data on examiner confidence and ease of interpreting record sets is also reported.

It should be noted that, in this study, all cases were from criminal suspects. Thus, innocent subjects would have obtained some knowledge about the crime. Additionally, the initial polygraph examination was based on an overall assessment of guilt or innocence and any scoring criteria used were not reported.

4.1.10 Frank S. Horvath and John E. Reid (1971)

"The Reliability of Polygraph Examiner Diagnosis of Truth and Deception." Journal of Criminal Law, Criminology and Police Science 62(2) (1971): 276-281.

Procedure

Forty sets of polygraph records were selected from the files of John E. Reid and Associates. Twenty sets were from verified guilty subjects and 20 sets were from verified innocent subjects. The charts contained 164 relevant questions of which 81 were confirmed as deceptive answers and 83 were confirmed as truthful answers. The forty sets of records were from twenty-five cases involving theft, sexual misconduct, sabotage, bribery, and criminal damage to property. The polygraph records contained no sets that were very obvious and no sets that were considered uninterpretable. Thoracic and abdominal respiration, blood pressure-pulse rate, muscular movements, and electrodermal activity were recorded. Examinations used the standard Reid Control-Question Technique.

Ten Reid examiners reanalyzed the records. They were not familiar with the cases and they agreed not to discuss any of the charts among themselves while the research was in progress. Seven examiners had over a year of experience; three had only four to six months of experience and were still in their internship training program. The examiners did not know the number of truthful and deceptive sets of records. they were not allowed to call any set inconclusive, but they could call individual questions inconclusive.

Results

The ten examiners correctly classified 85% of the guilty cases and 90.5% of the innocent cases. Experienced and inexperienced examiners differed in percentage of correct classifications. The seven experienced examiners correctly classified from 85% to 97.5% of the cases, with an average of 91.4%. The three inexperienced examiners correctly classified from 77.5% to 90%, with an average of 79.2%.

Analysis of individual questions revealed that, for truthful questions, 82.7% were correctly classified, 9.6% were incorrectly classified, and 7.7% were inconclusive. For deceptive questions, 81.4% were correctly classified, 12.5% were incorrectly classified, and 6.2% were inconconclsive. Omitting inconclusives, 89.6% of the truthful questions and 86.7% of the deceptive questions were correctly classified. Experienced examiners had higher correct classification rates for individual questions than inexperienced examiners. It should be noted that it is not known from the presented data whether examiners tend to misclassify the same people.

4.1.11 Fred L. Hunter and Philip Ash (1973)

"The Accuracy and Consistency of Polygraph Examiners' Diagnosis." Journal of Police Science and Administration 1(3) (1973): 370-375.

Procedure

Twenty cases from the files of John E. Reid & Associates were selected of which 10 were verified truthful and 10 were verified as untruthful. All the charts were of a control question technique, recorded on a four-channel polygraph (cardio, electrodermal, thoracic and abdominal respiration). The 20 sets of charts had 88 relevant questions of which 41 were verified as untruthful answers and 47 were verified as truthful.

Seven examiners from John E. Reid & Associates analyzed each record on two occasions separated by at least a three-month interval. Examiners did not know they were analyzing the same records on the two occasions. Examiners analyzed the records by making a subjective judgment of truth or deception based on comparison of control and relevant questions. Six examiners had more than one year of experience and one examiner had four and a half months of experience (was still an intern).

Results

Examiners correctly classified 86% of the truthful cases and 87% of the deceptive cases. The results were the same for the first analysis and the second analysis. Omitting inconclusives, 86% of the truthful cases and 88% of the deceptive cases (occasions combined) were correctly classifed. Occasion-to-occasion agreement for the same examiner on the individual cases ranged from 75% to 90% (average 85%).

The seven examiners correctly classified 81% of the truthful questions and 83% of the deceptive questions (occasions combined). Omitting inconclusives, 85% of the truthful questions and 88% of the deceptive questions were correctly classified. Occasion-to-occasion agreement for the same examiner ranged from 67% to 91% (average 81%).

It should be noted that it is not known whether examiners tended to misclassify the same people, and that, in the analyses, each misclassification by each examiner is treated as an error. The authors note that the poorest results were obtained from the least-experienced examiner.

4.1.12 Verne W. Lyon (1936)

Deception Tests with Juvenile Delinquents. Journal of Genetic Psychology 48(3) (1936): 494-497

Procedure

One hundred cases were selected at random from the polygraph files of the Institute for Juvenile Research in Chicago. All of the polygraph charts were of juveniles of which 81 were boys, and 19 were girls, over age 15, who were suspected of crimes but had not confessed, and positive corroboration by other means had not yet been established.

The instrument made a record of respiration and circulatory activity. The technique was unique, but is in the general category of relevant-irrelevant. During the first recording no questions were asked. "During the second recording there were three indifferent questions, free from any complex situations, and so framed that the truth of the answers can be checked at once." The critical questions followed, uninterrupted by any indifferent stimuli. All questions were phrased to be answered "yes" or "no."

The institute attempted to follow up on these 100 cases to see if their results were corroborated by positive evidence or confession. There were no inconclusive cases among those reviewed.

Results

Of the 100 polygraph tests, 20 were called "clear", or truthful; 80 cases were reported as "disturbed records," that were "presumptive of deception." Of the 20 "clear" or truthful cases, only 7 (35 percent) could be followed up. All 7 cases were verified as innocent by factual evidence. Of the 80 "disturbed records" or deceptive cases, 33 (41 percent) of the subjects later confessed, many of them immediately after the test. Thus, the polygraph examiner correctly classified 100% of the verified cases.

4.1.13 Jesse Orlansky (1962)

An Assessment of Lie Detection Capability, Institute for Defense Analyses, July 31, 1962. Report UBG 62-641

Procedure

The United States Army Military Police prepared a report for the assessment in which they reported on the follow up of 3,153 cases in which the examiner reported "no deception indicated."

Results

There were 3,080 (97.7%) "instances in which results of examination in this category were in accord with results of other investigative techniques."

There were 73 (2.3%) "instances in this category in which contrary results were obtained through investigation or interrogation."

The extent to which there may be other errors is unknown. Those found nondeceptive, and not otherwise found guilty by court or appear guilty by contrary evidence, do not complain.

4.1.14 Robert B. Peters (1982)

"A Survey of Polygraph Evidence in Criminal Trials." The American Bar Association Journal 68 (February 1982): 162-165.

Procedure

The author, a polygraph examiner at the Wisconsin State Crime Laboratory, surveyed the results of stipulated polygraph examinations conducted at the state crime laboratory during the 33-month period from 1976 to 1979. Stipulation means that the prosecution, defense and judge agree to admit results of the polygraph examination into evidence, with the examiner testifying and subject to cross-examination. Actually, the examiner testified in only 11 of the cases.

Initially, there were 220 cases. Twenty-five were eliminated because they were inconclusive (not clearly indicative of truth or deception). Twenty-three cases were eliminated because no opinion could be given (e.g. subject unfit, made statements that resolved the issue of the test). The disposition of the 89 cases the examiner classified as truthful and the 83 cases classified as deceptive was determined.

Polygraph tests used standard control-question procedures. Respiration, electrodermal activity, and cardiovascular activity were recorded. Charts were numerically scored with a score of +6 or more considered truthful, -6 or less deceptive, and between -5 and +5 inconclusive.

Results

The following table shows the polygraph examiner's decision versus the disposition of the case (i.e. whether the outcome of the case reflected truthfulness or deception by the examinee):

		Disposition of Case	
		Guilty	Innocent
Examiner's Decision	Deceptive	62	12
	Not Deceptive	1	88

Eighty-five of the 89 cases classified truthful by the polygraph examiner involved criminal suspects. One of the suspects was convicted at trial and 84 suspects had charges dropped. Four of the truthful cases involved alleged victims or witnesses. In all 4 cases, the accused was convicted at trial making these subjects truthful.

Of the 83 cases classified as deceptive by the examiner, 2 claimed to be victims of crimes; the rest were criminal suspects. Of the suspects, 51 pleaded guilty, 1 was acquitted, 3 had charges dropped with conditions (not included in table), 11 had charges dropped 6 cases were pending (not included in the table), and 9 were convicted. In the cases involving the 2 alleged victims, charges against the accused were dropped at trial making these subjects deceptive.

The following table illustrates the outcome of cases that went to trial (the examiner testified in only 11 of the cases).

		Examiner Testifying		Examiner Not Testifying	
		Convicted	Acquitted	Convicted	Acquitted
Examiner's Decision	Deceptive	9	1	9	0
	Truthful	1	0	0	0

As a measure of validity, the Peters survey must be tempered by the realization that the results of the polygraph examination had a direct influence on those who made decisions to prosecute or drop charges. However, it was not the sole basis for those decisions as is evidenced by the decision to prosecute one who was called truthful. Polygraph results were also influential in bolstering the testimony of witnesses and victims in the view of those who decided to use them in court, despite the fact that the polygraph examiner did not testify in their behalf.

6.1.15 David C. Raskin (1976)

"Reliability of Chart Interpretation and Sources of Errors in Polygraph Examinations." Report No. 76-3 Contract 75-NI-99-0001. National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, U.S. Department of Justice, Department of Psychology, University of Utah, Salt Lake City, Utah, June 7, 1976.

Procedure 1

Sixteen sets of polygraph records from a previous study (Barland and Raskin, 1976) were used. Twelve were from confirmed guilty subjects and four were from confirmed innocent subjects. All examinations had used the federal modification of Backster zone-comparison technique consisting of three or more charts of ten questions each. Physiological responses were recorded on a field polygraph.

Twenty-five field polygraph examiners with different types of training and experience (18 with at least one year experience; 13 with formal training in numerical scoring) rescored the records. Seven examiners explicitly used numerical scoring.

Results

Of the 400 judgments, 78.8% were correct, 8.2% were incorrect, and 13% were inconclusive. Excluding inconclusives, there were 90.5% correct decisions. There were 33 errors - 20 false positives and 13 false negatives. (It is not possible from the presented data to determine the percentage correct for guilty and innocent subjects separately).

The number of correct decisions did not differ with length of examiner experience (more than one year versus less than one year). The ten examiners who had attended school emphasizing numerical scoring had higher accuracy than the fifteen examiners who attended other schools (97.1% versus 86.9%). The seven examiners explicitly using numerical scoring had a significantly higher accuracy than the eighteen who did not (98.9% versus 87.9%). Comparison among examiners trained in numerical scoring revealed that the seven examiners explicitly using numerical scoring had higher accuracy than the six not explicitly using numerical scoring (98.9% versus 88.5%).

Procedure 2 and Results

Different samples of polygraph records were analyzed to determine whether decisions of polygraph examiners depended on the person or agency involved in case referral. These analyses were computed to test the "friendly polygrapher" proposition of Orne (1975). Orne suggested that successful detection depends on motivation to deceive and threat of consequences. Thus, subjects referred for polygraph examinations by defense attorneys should be less easy to detect since they know results will not be used if they are found deceptive. The first sample consisted of 204 criminal cases from an experienced examiner who used control-question techniques. Ninety-eight cases were examined for defense counsel and 106 were examined for law enforcement authorities. Of the defense cases, 77.6%

were classified truthful, 20.4% deceptive, and 2% inconclusive. Of the law enforcement cases, 75.5% were truthful, 19.8% deceptive, and 4.7% inconclusive. Thus, the two groups did not differ in type of decision.

A second sample (from Raskin and Barland, 1976) involved cases from two private polygraph firms. Nineteen examiners used control-question tests with criminal suspects. Fifty-four cases were cases for defense counsel and 57 were cases for law enforcement authorities or the subject's employer. Comparison of numerical scores for at least two charts of each set revealed no significant differences by type of case.

A third sample involved control-question tests conducted by the author on criminal suspects. Fourteen cases were from defense counsel and 13 were from law enforcement officials. Each case involved at least three charts and were numerically scored. Defense counsel cases were significantly more deceptive than law enforcement cases. Thus, there was no support for the "friendly polygrapher" hypothesis.

Procedure 3 and Results

Twelve cases involving conflicting polygraph examinations were analyzed to determine reasons for polygraph error. Descriptive data was presented.

4.1.16 Stanley M. Slowick and Joseph P. Buckley (1975)

"Relative Accuracy of Polygraph Examiner Diagnosis of Respiration, Blood Pressure, and GSR Recordings." Journal of Police Science and Administration 3 (3) (1975): 305-309.

Procedure

Polygraph charts from 15 truthful and 15 untruthful subjects whose cases had been independently verified and supported the original examiners conclusions were randomly selected from the laboratory case files of John E. Reid & Associates. The cases involved theft, industrial sabotage, drug abuse, and rape. Seven experienced staff examiners (average experience 3.8 years) participated in the study in which they were instructed to render decisions on the subject's veracity of 141 relevant questions (71 verified truthful and 70 verified untruthful) and 30 case issues by reviewing the complete charts. The examiners were not given the test questions or any other case information, and were instructed not to discuss their cases. Examiners also made decisions about the 30 cases and 141 relevant questions analyzing each physiological measure independently. This was done by analyzing each physiological measure on a different occasion separated by three month intervals and masking two channels while the third was analyzed. Abdominal or thoracic respiration, blood pressure/pulse rate, and electrodermal activity were the physiological measures.

Results

Chart review as a composite of three physiological measures demonstrated that the examiners correctly classified 91% of the truthful cases and 84% of the untruthful cases. Omitting inconclusives, 93% of the truthful and 85% of the untruthful cases were correctly classified. The individual question analysis revealed that 88% of the truthful questions and 73% of the untruthful questions were correctly classified. Omitting inconclusives, these figures are 93% and 80%, respectively.

The analysis by independent physiological measure at three month intervals revealed slightly lower correct classification rates. Differences between physiological measures in overall classification rates were small. It should be noted that it is not possible to determine from the presented data if examiners tended to misclassify the same subjects. The presented data consider each misclassification by each examiner an error.

4.1.17 Douglas E. Wicklander and Fred L. Hunter (1975)

The Influence of Auxiliary Sources of Information in Polygraph Diagnosis." Journal of Police Science and Administration 3(4) (1975): 405-409.

Procedure

Twenty sets of polygraph records selected from the files of John E. Reid & Associates, of which 10 sets were those of verified truthful subjects and 10 sets of verified untruthful subjects. The sets contained 89 relevant questions, 43 verified deceptive and 46 verified truthful. The instruments used were four channel Stoelting polygraphs (recording thoracic and abdominal respiration, blood pressure-pulse rate, and electrodermal activity) and the technique was Reid Control-Question Technique. Six experienced polygraph examiners on the Reid staff (average experience = 4 years) read each set of polygraph records on two different occasions, with a two-month lapse to eliminate recall. Each examiner had to call each set and each question truthful or deceptive without discussing his opinions with others. The judgment was subjective based on comparison of relevant and control questions.

Prior to the first review of charts the examiner was told only the type of case involved. Prior to the second review of the charts the examiner was given a synopsis of the case history, subject data, verbal and nonverbal behavior symptoms routinely noted by the original examiner, and the relevant test questions. Of interest was whether this extra information would influence chart analysis.

Results

Examiners correctly classified 87% of the truthful cases and 90% of the deceptive cases on the first chart review. Omitting inconclusives, 95% of the truthful and 92% of the deceptive cases were correctly classified.

At the second review 87% of the truthful cases and 98% of the deceptive cases were correctly classified. Omitting inconclusives these figures are 91% and 98%, respectively. There were fewer inconclusive judgments at the second review.

On the first review of the individual question analysis, 80% of the truthful questions and 86% of the deceptive questions were correctly classified (omitting inconclusives, 91% and 91%, respectively). On the second review, 82% of the truthful questions and 95% of the deceptive questions were correctly classified (omitting inconclusives, 92% and 97% respectively). It should be noted that it cannnot be determined from presented data whether examiners tended to misclassify the same people. Each misclassification is treated as an error.

4.1.18 Jan Widacki (1982)

"Analiza Przestanek Diagnozowania W. Badanich Poligraficznych." Uniwersytetu Slaskiego, Katowice, 1982 ("The Analysis of Diagnostic Premises in Polygraph Examinations.")

Procedure

All of the polygraph cases conducted on criminal suspects by the Department of Criminalistics of the Silesian University (Poland) in the years 1978-1979 which were verified by subsequent legal proceedings were analyzed. Sixteen people were judged guilty by both the polygraph examiner and subsequent legal proceedings. Twenty-two subjects were judged innocent by the examiner and subsequent legal proceedings.

Results

Control question tests were analyzed by the Backster numerical scoring method. In 91.6% of the cases, guilty and innocent subjects were differentiated (separate percentages are not given for guilty and innocent).

With peak of tension tests, 80% of the guilty persons reacted to the relevant questions. The authors say that 60% of the innocent subjects did not react to the relevant questions and 40% showed only minor reactions to relevant questions. Visual biofeedback on peak of tension tests enhanced the ability to discriminate guilty subjects from innocent subjects. It should be noted that the authors give incomplete details about a number of aspects of the study.

4.2 Laboratory Abstracts: Control Question Techniques

4.2.1 Gordon H. Barland (1981)

(Prepared By). "A Validity and Reliability Study of Counterintelligence Screening Test." Security Support Battalion, 902d Military Intelligence Group, Fort George G. Meade, Maryland, May 12, 1981.

Procedure

Fifty-six U.S. Army Employees (38 military, 18 civilian; 40 men, 16 women; age range 21 to 55 years; educational level 12 to 17 years) were subjects in a mock screening situation to determine polygraph accuracy with the Counterintelligence Screening Test with directed lie questions. This test is derived from the federal version of the zone comparison test. The test contains 13 questions - five relevant, four directed lies, and two symptomatic. Polygraph tests were administered by three polygraph examiners trained at the U.S. Army Military Police School polygraph course, certified by the Department of the Army with three, six, and nine years of polygraph experience. Procedures were used to standardize testing procedure among the examiners. Five different models of field polygraphs were used. Respiration, skin resistance, and relative blood pressure were recorded.

Questions involved subject's date of birth, place of birth, education, residences, and employment. All subjects initially filled out a biographical data sheet with truthful information. The information was confirmed by background investigations of each subject. Subjects then filled out new biographical data sheets (some giving false information) to give to the examiner. It was randomly determined which subjects would answer all questions truthfully and which would lie to one question. The question subjects lied about varied. Deceptive subjects were told they would receive $20 if they appeared truthful on the polygraph test. The rationale of lie detection was explained to all subjects. After a pretest interview, subjects received a stimulus test. The biographical data sheet was then reviewed. The polygraph test consisted of a minimum of three presentations of 13 questions. If the examiner was uncertain of the subject's status at the end of three charts, additional charts were run with a maximum of six. If the examiner was still uncertain after six charts, the subject was called inconclusive. The examiner was not allowed to interrogate the subject.

Three methods were used to evaluate the charts:

1. Zone method - Each relevant question was evaluated against the larger control question in its zone for each channel and scored from +3 to -3 as taught at the U.S. Army Police School Polygraph course. Scores for each relevant question were summed across charts. The answer to a question was designated as truthful if the score to a question was +3 or greater, deception if the score was -3 or lower, and inconclusive if the score was between +3 and -3.

2. Greatest control - The method used the same procedure as the zone method except that the five relevant questions were evaluated against the one control question on the chart with the largest overall reaction.

3. Relevant-irrelevant method - There was no numerical scoring and each relevant question was evaluated in terms of size and consistency of response without reference to control questions. For all methods, if the largest response on the chart occurred to one of the symptomatic questions, the subject was classified inconclusive.

Results

The first set of analyses used as data the examiners' classification of the subjects as deceptive or not deceptive irrespective of whether the examiner had identified accurately the deceptive question. The following results were obtained with the zone method:

	Actual	
	Deception	No Deception
Deception	21	5
Predicted		
No Deception	5	16
Inconclusive	4	5

Omitting inconclusives, 81% of the guilty and 76% of the innocent were correctly classified.

The following results were obtained with the greatest control method:

	Actual	
	Deception	No Deception
Deception	15	4
Predicted		
No Deception	7	20
Inconclusive	8	2

Omitting inconclusives, 68% of the guilty and 83% of the innocent were correctly classified.

The following results were obtained with the relevant/irrelevant method:

	Actual	
	Deception	No Deception
Deception	24	6
Predicted		
No Deception	4	19
Inconclusive	2	1

Omitting inconclusives, 86% of the guilty and 76% of the innocent were correctly classified. All three methods were able to identify nondeceptive subjects significantly greater than chance. Zone comparison and relevant/irrelevant were able to identify non-deceptive subjects greater than chance.

Results also were analyzed based on individual questions. There were 250 truthful questions and 30 deceptive questions. Nondeceptive questions were identified significantly greater than chance by all methods (range 91% to 97% correct classifications, omitting inconclusives). The relevant/irrelevant method was the only method able to identify deceptive questions significantly greater than chance (range 54% to 69% correct classifications, omitting inconclusives). Data also are provided on the stimulus test. Subjects received more than one chart on this test if the examiner's first or second choice was not the one selected by the subject. Classification accuracy (global assessment of deception/no deception) was significantly related to number of charts on the stimulus test.

4.2.2 Gordon H. Barland and David C. Raskin (1975)

"An Evaluation of Field Techniques in Detection of Deception." *Psychophysiology*, 12(3)(1975): 321-330.

Procedure

Seventy-two college students (sex not specified) were subjects in an experiment to evaluate detection of deception field techniques. Subjects were randomly assigned to guilty and innocent conditions. Guilty subjects were required to steal $10 from a desk drawer and could keep the money if they deceived the examiner. Innocent subjects were told the details of the crime and that failure to appear innocent reflected lack of cooperation and they may not get course credit for participating.

After a pretest interview involving collection of background information explanation of the rationale of lie detection, and at least two reviews of the questions on the test, subjects received three presentations of ten questions. A control - question technique (the Federal Government modification of the zone comparison polygraph test) was used. Between charts one and two, a card test was administered with some subjects getting positive feedback, others negative feedback, and others no feedback. The author noted that this manipulation had no effect and did not present the results. The polygraph examiner (experience not discussed), blind to subject status, scored the tests immediately by semi-objective scoring using the U.S. Army Military Police School criteria. Each of the control/relevant question pairs was scored from -3 to +3. A score of +5 or greater was considered truthful, -5 or lower guilty, and between ±4 inconclusive. The polygraph records also were scored by five additional examiners, blind to subject status with intensive experience who had graduated from the U.S. Army Military Police School. An objective quantitative scoring also was conducted by people unaware of the study and unfamiliar with field techniques using more physiological measures.

Cardiovascular activity, skin resistance, and thoracic or abdominal respiration were recorded with a field model polygraph. The authors note that the recording of skin resistance and cardiovascular activity were not of the quality obtained from newer field polygraphs.

Results

The following results were obtained with the semi-objective scoring procedure:

		Actual	
		Guilty	Innocent
Predicted	Guilty	23	6
	Innocent	3	15

Of the seventy-two subjects, 53% were correctly classified, 12% incorrectly classified, and 35% inconclusives. (The inconclusives are omitted from the above table because the authors did not report their actual status). Omitting inconclusives, 81% were correctly categorized. Analysis of variance on the semi-objective scores indicated that all physiological measures discriminated between guilt and innocence but skin resistance was superior.

There was considerable agreement between the five additional examiners and the original examiner. Percentage of correct classifications ranged from 79% to 86% (mean = 81.7%) for the six examiners. Thus, the blind examiners were similar to the original examiner. Correlations between pairing of examiners for total semi-objective numerical scores ranged from .78 to .95 (mean = .86). Of the 1,080 pairwise comparison, the examiners agreed on 66.3%. There were only 25 instances (2.3%) where the examiners reached opposite conclusions.

Data on the effect of changing the inconclusive range and the objective quantitative analysis also are provided.

4.2.3 M. T. Bradley and Michel Pierre Janisse (1981)

"Accuracy Demonstrations, Threat, and the Detection of Deception: Cardiovascular, Electrodermal, and Pupillary Measures." Psychophysiology 18(3) (1981): 307-315.

Procedure

One hundred ninety-two male college students were subjects in a study to determine the effect of several variables on detection of deception. Guilty subjects participated in a mock crime involving stealing and hiding an envelope containing $1.00. All subject were told that they were accused of the crime and were to deny involvement. One-half of the innocent and one-half of the guilty subjects were told they would receive a painful electric shock (the shock was not administered) if they were judged guilty.

Pupil size, heart rate, and skin resistance were recorded. The polygraph examiner was blind to subject status. The experience of the polygraph examiner is not discussed. Subjects were given both a control-question test and a guilty knowledge test about the crime (tests were counterbalanced). Prior to the polygraph test, the questions on the control-question test were reviewed with the subject. Subjects were allowed to discuss the questions and eliminate ambiguities about the control questions. The control-question test consisted of nine questions (three relevant pairs) presented three times. Questions on the guilty knowledge test were not reviewed with the subject prior to the polygraph test. This test consisted of four, five-item question sequences plus a buffer question for each sequence; the test was presented once to the subject.

Before the polygraph test, a series of rigged card tests with three trials were tested. Subjects were given false feedback about the number of times the card they had selected had been detected. Subjects were falsely told that from 0 to 3 cards had been detected.

Each control-relevant pair from the control-question test was scored 1, 0, or -1 and summed across questions. A score of +2 or greater reflected innocence, -2 or less reflected guilt; scores between +2 and -2 were classified as inconclusive. On the guilty knowledge test, responses to each of the four sequences were scored 2, 1, or 0 based on the relative magnitude of the response to the critical item.

Results

The following table demonstrates frequency of detection for each physiological measure on each test:

		Actual			
		Skin Resistance			
		Control Question Test		Guilty Knowledge Test	
		Guilty	Innocent	Guilty	Innocent
	Guilty	58	9	57	11
	Innocent	13	56	39	85
	Inconclusive	25	31		
Predicted		Pupil Size Change			
	Guilty	33	30	32	19
	Innocent	21	25	64	77
	Inconclusive	42	41		
		Heart Rate Change			
	Guilty	34	19	43	17
	Innocent	20	32	53	79
	Inconclusive	42	45		

Skin resistance was the most efficacious measure in separating guilty and innocent people. With skin resistance, 82% of the guilty subjects and 86% of the innocent subjects were correctly detected (excluding inconclusives) on the control-question test. With the guilty knowledge test, 59% of the guilty subjects and 89% of the innocent subjects were correctly classified using skin resistance. Detection accuracy results for a combination of measures are not presented.

Analysis of variance on the numerical scores demonstrated that, for the control-question test, punishment influenced the change in heart rate measure and manipulated effectiveness was directly related to detection detectability with skin resistance. In the guilty knowledge test, punishment did not affect any of the dependent measures, but there were significant effects for manipulated effectiveness with skin resistance.

The authors suggest that the detection accuracy with the control-question test and guilty knowledge test should not be directly compared because they used a weak version of the guilty knowledge test (few items of information) and they used less than optimal procedures for the control-question test. That is, for the control-question test, they did not repeat trials for inconclusive subjects, they did not combine physiological measures for detection and their semi-objective scoring system had a limited range.

4.2.4 Robert J. Gatchel, John E. Smith, and Norman M. Kaplan (1983)

"The Effect of Propranolol on Polygraphic Detection of Deception." (1983) Unpublished Manuscript, University of Texas Health Sciences Center.

Procedure

Twenty-eight males aged 20 to 40 years were paid $15 for participating in a study to determine the effect of propranolol on detection of deception in a mock crime situation. Subjects were randomly assigned to one of four groups (seven subjects per group); (1) Guilty - propranolol, (2) Guilty - no propranolol; (3) Innocent - propranolol, and (4) Innocent - no propranolol. The guilty subjects were required to steal and then hide a piece of jewelry from an office in one hour. Innocent subjects were told that a mock crime had taken place but were not told details. All subjects were told to deny involvement in the crime. Both innocent and guilty subjects could receive a $10 bonus for appearing truthful on the test. Drug subject received a 40 mg. tablet of propranolol one to two hours before the polygraph test.

Blood pressure, electrodermal activity, and abdominal and thoracic respiration were recorded. Two professional polygraph examiners (each testing 14 subjects), blind to subject's assigned group status, administered a nine-item control question polygraph test. Detection was based on pairs of control-relevant questions (the last six questions). Each pair was scored (by the examiner) from +3 to -3 based on the size of the relative difference. Respiration was scored based on the clearest channel. Scores were summed across pairs and channels. Subjects with score +6 or higher were designated truthful, -6 or lower were designated as deceptive, and inconclusive between ±5. Examiners also rated on a seven-point scale whether they thought the subject had taken a drug.

Results

Results are listed in the following table:

		Actual			
		Guilty: No Drug	Innocent: No Drug	Guilty: Drug	Innocent: Drug
Predicted	Guilty	3	0	4	0
	Innocent	1	4	0	7
	Inconclusive	3	3	3	0

Analysis of variance revealed a significant guilt-innocence effect, but no significant drug effects or interactions. Examiners were correct about subject's drug status in 71% of the cases; however, they were not very confident about their ratings. The authors note that their study has more inconclusives than other studies. They suggest that this reflects conservative behavior on the part of the examiners since the examiner knew that drugs were being administered.

4.2.5 David L. Hammond (1980)

"The Responding of Normals, Alcoholics, and Psychopaths in a Laboratory Lie-Detection Experiment." Unpublished Doctoral Dissertation, California School of Professional Psychology, 1980.

Procedure

Normal college students (11 innocent and 10 guilty), alcoholics (10 innocent and 10 guilty) and psychopaths (9 innocent and 12 guilty) participated in the study. All subjects were male, aged 21 to 55 years, and paid $7.00 for participating. Guilty subjects participated in a mock crime involving thefts of $10.00 and were told not to confess. Instructions were presented by tape and were designed to motivate the subjects. Innocent subjects listened to the same tape and, thus, knew the general nature of the crime. All subjects could receive an additional $10.00 for a truthful outcome on the test. Alcoholics had previous treatment for alcoholism and met certain diagnostic criterion. Psychopaths had a prior prison record and met other diagnostic criteria. Respiration, electrodermal activity, and cardiovascular activity were recorded. Inexperienced examiners from the Backster School of Lie Detection in the fifth and sixth weeks of their seven-week training session conducted the tests. The Backster "You Phase" control-question procedure was used. The test was scored with the zone-comparison method. Testing involved a minimum of three charts, but in most cases two charts were used for analysis. Numerical scores greater than 8 were considered truthful, less than 8 were considered deceptive, and between +8 and -8 were inconclusive. An expert examiner also independently evaluated the polygraph charts.

Results

The following results were obtained for the student examiners:

		Actual	
		Guilty	Innocent
Predicted By Student Examiners	Guilty		
	Normal	6	3
	Alcoholic	9	1
	Psychopath	8	2
	Innocent		
	Normal	1	4
	Alcoholic	0	5
	Psychopath	0	3
	Inconclusive		
	Normal	3	4
	Alcoholic	1	4
	Psychopath	4	4

Omitting inconclusives, 86% of the normal guilty, 100% of the alcoholic guilty, and 100% of the psychopathic guilty were correctly classified by the student examiners. Omitting inconclusives, 57% of the normal innocent, 83% of the alcoholic innocent, and 60% of the psychopathic innocent were correctly classified.

The following results were obtained for the expert examiner who conducted a blind analysis of the student charts:

		Actual	
		Guilty	Innocent
	Guilty		
	Normal	4	2
	Alcoholic	8	0
	Psychopath	9	0
Predicted By Expert Examiner	Innocent		
	Normal	0	0
	Alcoholic	0	2
	Psychopath	0	2
	Inconclusive		
	Normal	6	9
	Alcoholic	2	8
	Psychopath	3	7

Omitting inconclusives, 100% of the guilty subjects in each condition were correctly classified by the expert examiner. Omitting inconclusives, the expert examiner correctly classified 0% of the normal innocents, and 100% of the alcoholic and psychopathic innocents. Data also are presented using other inconclusive ranges.

Analysis of variance on the numerical scores revealed no significant effects for examiner experience, personality, or physiological measures. Student examiners' numerical scores and expert examiner's numerical scores were correlated .64 for the innocent condition and .61 for the guilty condition.

4.2.6 Charles Robert Honts (1982)

"The Effects of Simple Physical Countermeasures on the Physiological Detection of Deception." Unpublished Master's Thesis, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, May, 1982. [Also presented at the Society for Psychophysiological Research, Minneapolis, Minnesota, October 1982, with Robert L. Hodes.]

Procedure

Forty-eight students (males and females, mean age 18.8 years) were participants in a study to determine the effect of physical countermeasures on the detection of deception, using a control question test. Subject's were randomly assigned to one of four groups (12 subjects per group); (1) Innocent, (2) Guilty Controls - no countermeasure, (3) Guilty - pair countermeasure, and (4) Guilty - muscle tension countermeasure. All guilty subjects participated in a mock crime which involved stealing an examination. The guilty control subjects were told that it may be possible to deceive the polygraph examiner. Guilty-pain countermeasure subjects were given training on biting the tongue at particular points during the control question test and were told to relax during relevant questions. Guilty-muscle tension subjects received training on pressing their toes against the floor and tensing their muscles at critical points during the test and also were told to relax during relevant questions. Innocent subjects knew the general nature of the mock crime, but were naive to its details. They were told that if they were honest the examiner would find them truthful. All subjects were told they would get extra points applied to their final course grades if they produced a truthful outcome on the polygraph.

All subjects received two experimental sessions. During the first session, subjects were assigned to a group and received training if they were to use countermeasures. The second session (within one week of the first) was the polygraph exam. All guilty subjects were encouraged to appear innocent to receive bonus points. Subjects were cautioned not to be detected using countermeasures or they would lose bonus points.

Thoracic or abdominal respiration, skin resistance, and cardiovascular activity were recorded. A licensed examiner with five years of field experience trained at the Backster School of Lie Detection, administered the polygraph tests. The examiner did not know the guilt/innocence status of the subjects, but did know the proportions of guilt and innocent subjects and did know that muscle or pain countermeasures would be used. Subjects received four presentations of eight questions.

Immediately after the polygraph test, the examiner was required to make an innocent/guilt/inconclusive decision based on limited chart analysis (less than five minutes) and to judge whether countermeasures were used. Two weeks after the last subject was tested, the examiner scored the charts by semi-objective methods and judged whether countermeasures were used from the physiological data. Charts were sent to an experienced evaluator for a blind evaluation using the semi-objective method. An objective, quantitative analysis of the data also occurred. The semi-objective analysis used the Backster Spot Analysis Technique in which pairs of responses were rated from -3 to +3 (based on the relative magnitude of relevant and associated control question) and summed. Post examination debriefings indicated that five subjects in the countermeasure groups failed to employ the designated countermeasures and three subjects in the guilty-control group tried to use countermeasures. Data were analyzed with regard to subject's debriefing reports.

Results

The original examiner was not able to detect countermeasure usage either from a subject's behavior or from the polygraph charts. The blind rescorer also could not detect countermeasure usage.

The ability of the orignal examiner to correctly classify subjects based on a limited chart analysis is reflected in the following table (numbers in parentheses are those subjects that did not comply with the group's instruction).

		Actual			
		Guilty: Control	Innocent	Guilty: Pain	Guilty: Muscle
Predicted	Guilty	5(1)	4	5(3)	7(2)
	Innocent	1	6	1	1
	Inconclusive	3(2)	2	3	2

Results for semi-objective analysis (+12 or greater indicating innocence, -12 or lower deception, and between +12 and -12 inconclusive based on the three most productive charts) are in the following table:

		Actual			
		Guilty: Control	Innocent	Guilty: Pain	Guilty: Muscle
Predicted	Guilty	6(1)	2	5(3)	6
	Innocent	0	4	1	0
	Inconclusive	3(2)	6	3	4(2)

Excluding inconclusives, the examiner was correct 89% of the time. Countermeasures did not affect the results of either the limited chart analysis or the semi-objective analysis. Analysis of variance for semi-objective scores from four charts (with the five noncompliant subjects in the countermeasure groups removed) also did not reveal a countermeasure effect. Objective quantitative analysis of each physiological measure found significant countermeasure effects for finger pulse amplitude, the results for respiration amplitude approached significance.

Semi-objective scoring of each question by the original examiner was significantly correlated (r = .88) with those of the blind evaluator. When there was a decision of truthful or deception, there was 100% agreement between the raters.

4.2.7 D. C. Raskin and R. D. Hare (1978)

Psychopathy and Detection of Deception In a Prison Population. Psychophysiology, 15 (1978); 126-136

Procedure

Twenty-four psychopaths (mean age = 23.1 years) and 24 non-psychopaths (mean age = 26.5 years), from an inmate population, participated in the study. Twelve psychopaths and 12 non-psychopaths were innocent and 12 psychopaths and 12 non-psychopaths were guilty of a mock crime involving the theft of $20 from an adjacent room. Subjects were then given a polygraph test about the crime and could keep the $20 if their test performance was successful. Guilty subjects were to deny involvement in the crime; innocent subjects were told about the crime and instructed to tell the truth. Psychopaths were selected by an experienced psychologist based on an assessment of their behavior over a long period. The conception of psychopathy was consistent with that of Cleckley (1964).

Subjects were administered a control question polygraph test by an examiner trained in field polygraph techniques blind to subject status. Control questions were developed from a pretest interview. Relevant questions were constant for all subjects; control questions differed. Prior to the 10 questions, subjects were administered a stimulation test to demonstrate technique effectiveness. The polygraph test consisted of three charts; if results were not obvious, additional charts were run to a maximum of seven. In such situations, the fourth chart used a silent answer procedure. The examiner continually stressed the importance of being truthful and directed the attention of innocent subjects to control questions and guilty subjects to relevant questions.

Thoracic and abdominal respiration, skin conductance, skin potential, heart rate, finger blood volume, and finger pulse amplitude were recorded. Data were evaluated in two ways. The first was by the examiner using responses previous research had demonstrated significantly discriminated between guilt and innocence.

Each control and relevant question pair were compared, scored from +3 to -3, and summed; +6 or higher indicated innocence; -6 or lower indicated guilt. Results using all charts for each subject are presented in the following table:

		Actual	
		Guilty	Innocent
Examiner Decision	Guilty - (Psychopath)	12	1
	(Nonpsychopath)	9	1
	Innocent - (Psychopath)	0	11
	(Nonpsychopath)	0	10
	Inconclusive - (Psychopath)	0	0
	(Nonpsychopath)	3	1

Thus, 88% were correctly classified, 4% incorrectly classified, and 8% were inconclusive. Omitting inconclusives 96% were correctly classified. Psychopaths and nonpsychopaths did not significantly differ in classification accuracy. Comparison of classification based only on three charts per subject with classification using additional charts when necessary demonstrated a reduction in inconclusives with more charts, but similar correct classification rates. Optimal boundary was suggested to be in the range of ±2 to ±4. Analysis of variance and post-hoc comparisons on numerical scores revealed that skin conductance was the best guilt/innocence discriminator and the cardiovascular measures the poorest, although all measures significantly discriminated between the groups. Respiration was better at identifying innocent subjects than guilty subjects. Effects of psychopathy on the individual measures were minimal. Results of a more quantitative analysis using additional physiological measures scored by a technician with no knowledge of the experiment also are reported. Characteristics of individual physiological measures associated with guilt and innocence are discussed.

4.2.8 L. I. Rovner, D. C. Raskin and J. C. Kircher (1978)

"Effects of Information and Practice on Detection of Deception." Presented at the Society for Psychophysiological Research, Madison, 1978.

Procedure

Seventy-two males participated in a study to determine the effect of information and practice on detection of deception. The 36 guilty subjects participated in a mock crime (stealing a ring). The 36 innocent subjects were told a theft had occurred. Prior to their polygraph test, subjects were divided into the following groups with 12 innocent and 12 guilty subjects in each group: (1) STD - Subjects merely waited in a room before their polygraph test, (2) INFO - Subjects were given information about the nature of the polygraph and how to appear innocent, and (3) INFO + Practice - Subjects were given the same information as group two, and two polygraph practice sessions with feedback about their performance. Examiners, (not professional polygraph examiners), blind to a subject's guilt or innocence, administered a control question polygraph test. Subjects were paid $7.50 for participating in the study and $10 if the outcome of their test was truthful. All subjects were to deny involvement in the theft. Skin conductance, blood pressure, respiration, and digital vasomotor activity were recorded; there were three charts per subject. Responses were scored with a numerical scoring system and an inconclusive range of ±5. Results are based on the scoring of a second examiner blind to test results and subject status.

Results

In both the STD and INFO groups, 88% were correctly classified, 4% were incorrectly classified, and 8% were inconclusive. Omitting inconclusives 95% were correctly classified. The one incorrect classification in the STD group and the 1 incorrect classification in the INFO group were false positives. The actual guilt or innocence of inconclusive subjects was not reported. INFO + Practice reduced the number of correct classifications and increased the number of false positives and negatives. That is, 62.5% were correctly classified, 25% were incorrectly classified (three false positives and three false negatives), and 12.5% were inconclusive. Analysis of variance and post-hoc comparisons revealed that the innocent subjects in the INFO + Practice group had significantly lower scores than the other two groups, whereas the three guilty groups did not significantly differ. The authors note that the lack of time and similarity between practice and the actual polygraph test may be important to observation of the effect.

4.2.9 William M. Waid, Emily Carota Orne, and Martin T. Orne (1981)

"Selective Memory for Social Information, Alertness, and Physiological Arousal in the Detection of Deception." Journal of Applied Psychology (1981) 66(2): 224-232.

Procedure

Thirty-four designated innocent and 40 designated guilty subjects (males-mean age 18 to 28 years) participated in a study to determine the relationship between detection of deception and memory of questions and words involved in the polygraph test. Guilty subjects overlearned 6 code words during timed interpolated tasks. Innocent subjects performed the same tasks but learned no words. Innocent subjects were told it was often difficult to prove one's innocence on a polygraph test. Guilty subjects were told that highly mature and intelligent people could deceive the examiner. Care was taken to involve innocent subjects in the procedures. Subjects were tested by a professional examiner blind to subject status; skin conductance, blood pressure, and respiration were recorded. Subjects were administered three guilty person tests and a guilty knowledge test. The guilty person tests consisted of 9 relevant questions, 8 control questions, and 5 irrelevant questions. A card test was administered between the first and second tests and subjects were questioned about their answers. In the guilty knowledge test, subjects were asked if each of 24 words had special meaning. The list was presented twice. Subjects were then asked to write down as many words as they could remember from the guilty knowledge test and as many questions as possible from the guilty person test.

Results

Different methods of quantifying the data were used to determine detection accuracy for the guilty person tests. One method averaged response to relevant and control questions. A subject was considered deceptive if average response to the relevant questions was larger than average response to control questions. The following results were obtained when skin conductance was used.

		Actual	
		Guilty	Innocent
Predicted	Guilty	29	8
	Innocent	11	26

72.5% of the guilty subjects and 76.5% of the innocent subjects were correctly classified.

When the detection criterion was showing a larger skin conductance response to relevant than control questions on 7 or more questions, the following results were obtained:

		Actual	
		Guilty	Innocent
Predicted	Guilty	22	8
	Innocent	18	26

Fifty-five per cent of the guilty subjects and 76.5% of the innocent subjects were correctly detected. Detection accuracy was much lower with respiration and with blood pressure.

There were results for memory of test items. Analysis of variance indicated that there were larger skin conductance responses to relevant and control questions that were subsequently recalled than to relevant and control questions not subsequently recalled on the first and second guilty person tests. On the third guilty person test subsequently recalled control questions elicited larger responses than control questions not subsequently recalled, but this was not true for relevant questions. On certain tests, more guilty subjects were called deceptive when skin conductance responses were larger to relevant than control questions, and more innocent subjects were called not deceptive when responses were larger to control questions than to relevant questions.

There was less of a relationship between recall of items and detection on the guilty knowledge test than with the guilty person test. There were no relationships between recall and blood pressure or respiration. Detection accuracy with the guilty knowledge test was not reported.

4.2.10 **William M. Waid, Martin T. Orne, and Stuart K. Wilson (1979)**

"Effects of Level of Socialization on Electrodermal Detection of Deception." Psychophysiology 16 (1) (1979): 15-22.

Procedure

Thirty male college students (aged 18 to 28 years) participated in an experiment to determine the effect of socialization on detection of deception. The fifteen subjects designated guilty overlearned 6 "code words" during a one hour procedure of time interpolated tasks. The fifteen innocent subjects performed the same tasks but learned no "code words." The experimenters emphasize that care was taken to involve both the innocent and guilty subjects in the task. Guilty subjects were told that highly intelligent, mature individuals could escape detection.

A professional polygraph examiner with no knowlege of a subject's status or the code words administered several types of polygraph tests. The six "code words" differed for the subjects to prevent bias in the examiner. Skin conductance was recorded. The following tests were administered (always in the same order) after a pretest interview to obtain personal history and a review of the relevant questions on the first test: a) Guilty Person Test - Subject was asked three questions about his guilt or innocence and two interpolated control questions. The subject was questioned about his answers, presented a stimulus test, and then a second Guilty Person Test. The first and second Guilty Person Tests differed in that the former used unreviewed control questions, whereas the later reviewed control questions with the subject; b) Peak-of-Tension Test - Subjects were asked how many correct code words existed. Two series of numbers were presented one with the sequence in ascending order and one with the sequence in descending order; c) Guilty Knowledge Test - Subjects were asked if each of 24 words had special meaning to them. Six of the words were code words. This list was repeated four times.

Subject then completed the socialization scale of the California Psychological Inventory and other questionnaires. Criteria for detection differed with type of test. On the Guilty Person Tests, subjects were classified as deceptive if the response to any of the three critical questions was larger than the largest response to the control questions. Deception was indicated on Peak-of-Tension if the largest response of the series was to the critical number (omitting the first number). For the Guilty Knowledge test a code word was considered detected if it elicited a larger response than the three code words in the same category. Subjects having code words detected seven or more times were considered deceptive.

Results

Results are in the following table:

		Actual	
		Guilty	Innocent
Predicted	Guilty Person 1		
	Guilty	12	3
	Innocent	3	12
	Guilty Person 2		
	Guilty	12	3
	Innocent	3	12
	Peak of Tension		
	Guilty	7	3
	Innocent	8	12
	Guilty Knowledge		
	Guilty	8	1
	Innocent	7	14

There were significant effects for socialization. Decpetive subjects not detected scored significantly lower on the socialization scale than detected deceptives for most of the tests. Among guilty subjects socialization was significantly positively correlated with conductance response magnitude (mean of four tests). Misclassified innocents had higher socialization scores than other innocents. Conductance response magnitude was significantly positively correlated with socialization in innocent subjects. It should be noted that the effectiveness of the different polygraph tests can not be determined in this study, since the tests were administered in the same order for all subjects.

4.2.11 Jan Widacki and Frank Horvath (1978)

"An Experimental Investigation of the Relative Validity and Utility of the Polygraph Technique and Three Other Common Methods of Criminal Identification." Journal of Forensic Science 23 (3) (July 1978): 596-601.

Procedure

Subjects were 80 student volunteers (42 males, 38 females; aged 19 to 24 years) at Jagolian University (Poland). Each subject provided the experimenter with hand-writing specimens, fingerprints and full-face photographs. Subjects were divided into 20 groups of four each. In each group there were three innocent persons and one perpetrator. Each perpetrator was involved in an independent, but similar case. The perpetrator was instructed to take an envelope to a specific building and give the envelope to a specific person (whom they did not know). After the envelope was delivered, the perpetrator received a parcel containing a cosmetic of small value and signed a receipt form with a fictitious name. They were to try to disguise their handwriting.

All subjects were then given a polygraph examination by an examiner blind to their guilt or innocence. A four-channel Lafayette polygraph and Reid Control Question procedures were used. Respiration, cardiovascular activity and electrodermal activity were recorded. Examiners made subjective decisions as to a subjects guilt or innocence. Examiners knew that each group of four subjects was involved in the same case and tested all subjects in a group before selecting the perpetrator. The experience of the polygraph examiner is not discussed.

Independent of the polygraph test, three other types of evidence were collected including handwriting analysis of the receipt by a handwriting expert, fingerprint analysis (from fingerprints obtained from the envelope and instruction sheet) by a fingerprint expert, and eyewitness identification by the person receiving the envelope (those people had prior knowledge that they would be required to make the identification). The handwriting expert, the eyewitness, and the fingerprint expert were to select the perpetrator from each group of four.

Results will be presented by cases instead of individuals since the data from subjects involved in each case was not independent.

	Correct	Error	Inconclusive	Accuracy
Polygraph	18	1	1	95%
Handwriting	17	1	2	94%
Eyewitness	7	4	9	64%
Fingerprints	4	0	16	100%

Fingerprinting was the most accurate method, but yielded many inconclusive results. Polygraph and handwriting had high accuracy and few inconclusives. Eyewitness identification was neither accurate nor useful. It should be noted that the fingerprints obtained in many cases were not of high quality. The authors note that the forced choice procedure used in the study would be expected to increase the detection rates and caution against overgeneralization.

4.3 Laboratory Abstracts: Relevant - Irrelevant Techniques

4.3.1 Richard H. Blum and William Osterloh (1968)

"The Polygraph Examination as a Means for Detecting Truth and Falsehood in Stories Presented by Police Informants."
Journal of Criminal Law, Criminology and Police Science 59 (1968): 133-137.

Procedure

A total of 17 male and 3 female informants who had given information on criminal cases to local or federal agencies were selected and paid to engage in the experiment. Great care was taken to protect their identities and the fact they were cooperating with the police, as their lives would otherwise be in danger. Some of the stories that the informants told the examiner were completely true (n=9), and some were completely false (n=4). Some were partly true and partly false (n=7). (This is typical of informants, and similar to the problem in preemployment screening.) The topics about which the informants gave information covered a wide variety of crimes. The true stores were those which had been provided to their police handler on a previous occasion which had stood the scrutiny of investigation. A false story was one jointly invented by the officer and the informant, but compatible with the informant's ordinary role and opportunities, and containing credible information. True stores with false items were true stores told in the past (which had been confirmed by investigation) in which some critical items had been made false such as the name of the offender, the place where the goods were hidden or fenced, etc. Each story was first written, then rehearsed with the police handler. The examiner had no idea as to which examinee was telling the truth, which was lying all together, and which was only partly truthful. He also was blind as to the ratio of truth telling and lying. Seventeen stories contained 5 relevant questions; the remaining 3 stories contained 6, 7 and 8 relevant questions.

Three professional polygraph examiners used a standard three-channel Stoelting polygraph and the relevant-irrelevant technique. They were forced to make a decision on all of the 106 relevant questions from 20 subjects. Inconclusive decisions and reexaminations were not permitted as might occur in regular practice. Subjects were instructed not to make admissions during the polygraph examination. Examiners made a subjective judgment of truth or deception on each critical item of each story.

Results

Examiners were able to identify stories as totally true, totally false, or stories containing some false information (irrespective of the particular question) as illustrated in the following table:

		ACTUAL		
		Totally False	Totally True	Partially False
Predicted	Totally False	4	0	0
	Totally True	0	9	0
	Partially False	0	0	7

However, the examiners were not always able to correctly classify individual relevant questions of informants telling partially true stories. They were incorrect about 4 questions involving 3 subjects. Thus, 102 of 106 questions were correctly classified.

4.3.2 Eileen J. Correa and Henry E. Adams (1981)

"The Validity of the Preemployment Polygraph Examination and the Effects of Motivation." Polygraph 10 (3) (September 1981): 143-155. (Also-Eileen Joyce Israel. Unpublished Doctoral Dissertation, University of Georgia, Athens, Georgia, 1977.)

Procedure

Twenty male and 20 female undergraduates at the University of Georgia participated in a laboratory study to determine the validity of a preemployment polygraph test. An equal number of males and females were randomly assigned to four groups: (1) lying with motivation, (2) lying without motivation, (3) truthful with motivation, and (4) truthful without motivation.

Each subject received two sessions. During the initial screening session, subjects filled out a Preemployment Data Sheet with an experimenter; nine potential lie questions were identified. Three of the nine potential lie questions (control lies) were included in case subjects had initially lied while filling out the Preemployment Data Sheet. These control lies involved activities occurring during the initial screening session.

Subjects in the lying groups were to lie to the nine questions; subjects in the truthful groups were to answer all questions truthfully. Subjects in the motivated groups were told that the best liar in the lying group and the best truth teller in the truthful group would get a $25 reward and that the award selection would be based on the polygraph charts.

The polygraph test used a relevant/irrelevant technique. The test consisted of three series of questions about the Preemployment Data Sheet. Each series contained three potential lie questions (one control lie in each series). Each question from the Preemployment Data Sheet either preceded or followed an irrelevant norm question. Between charts the examiner questioned subjects about any responses that appeared to be larger to the relevant questions than the irrelevant questions. These questions were rephrased and inserted at the beginning of the next series. The examiner (experience not discussed) made a subjective decision of lying or truthful for each subject and for each question. The examiner was blind as to subject status. Respiration (thermister inside nostril), heart rate, and skin resistance were recorded.

Results

The following table presents the data on the examiner's overall judgement of the subject:

		Actual			
		Lying		Truthful	
		Motivated	Unmotivated	Motivated	Unmotivated
Predicted	Lying	10	10	0	0
	Truthful	0	0	10	10

The examiner correctly classified all of the subjects.

The individual lie questions also were analyzed. Three of the nine lies were control lies; the remaining six lies were from the Preemployment Data Sheet. All of the control lies were correctly identified; there were some errors in the identification of the other lies as indicated in the following table:

		Correct	Incorrect
Control Lie Questions	Lying-Motivated	30	0
	Lying-Unmotivated	30	0
Data Sheet Lies	Lying-Motivated	49 (82%)	11 (18%)
	Lying-Unmotivated	41 (68%)	19 (32%)

The difference between the motivated and unmotivated groups was not significant.

Objective numerical analyses of the data also were computed. There was no overall motivation effect, but there were some interactions between motivation and other independent variables. Lying responses were accompanied by increases in skin conductance level and large decreases in heart rate, whereas truthful responses were accompanied by decreases in skin conductance level and small decreases or increases in heart rate.

4.4 Laboratory Abstracts: Guilty Knowledge and Peak of Tension Techniques

4.4.1 Kristen D. Balloun and David S. Holmes (1979)

"Effects of Repeated Examinations on the Ability to Detect Guilt with a Polygraphic Examination: A Laboratory Experience with a Real Crime." Journal of Applied Psychology (1979) 64(3): 316-322.

Procedure

Eighteen male college students with high Pd (psychopathic deviate scores on the Minnesota Multiphasic Personality Inventory) and 16 subjects with low Pd scores participated in a study to determine the effect of repeated examinations on detection of deception. Each subject was tested with two confederates. Subjects were told that the purpose of the experiment was to determine whether they did better on a bogus intelligence-information test when working alone or in groups, and that they would work in groups. Subjects were told it was important to do well and if their performance was poor they would have to meet with a panel of psychologists. When the experimenter left the two confederates urged the subject to cheat. One of the confederates said a friend had previously taken the test and produced a copy of the answer sheet. About 50% of the subjects actually cheated.

Subjects were taken to the laboratory and told that it had been learned that some had cheated. They were administered the guilty knowledge test after the test procedures were explained. The test consisted of two series of questions, each series containing 5 relevant questions, and each of those 5 relevants had 5 alternatives. The relevant questions contained information that only guilty subjects could have known from the answer sheet provided by the confederate. The first alternative to each question was a buffer. Heart rate, skin resistance, and finger pulse volume were recorded. If the critical alternative to each question elicited the largest response it was scored 2; if the critical item elicited the second largest response it was scored 1; all other possibilities were scored 0. Scores were summed across questions. Subjects with scores greater than 5.5 were called cheaters; those with scores less than 5.5 were called noncheaters.

Results

Results for skin resistance are in the following table:

		Actual			
		Series 1		Series 2	
		Cheaters	Noncheaters	Cheaters	Noncheaters
Predicted	Cheaters	11	2	3	1
	Noncheaters	7	14	15	15

On series 1, 61% of the cheaters and 87.5% of the noncheaters were correctly identified. On series 2, 17% of the cheaters and 94% of the noncheaters were correctly identified. There was a significant reduction in the detection of cheaters from series 1 to series 2.

Analysis of variance on the scores for skin resistance revealed significantly higher scores on test 1 than test 2 and significantly higher sores for cheaters than noncheaters. There were no significant effects or interactions for Pd (psychopathic deviance). Heart rate and finger pulse volume were not effective in detecting cheating.

4.4.2 P.O. Davidson (1968)

"Validity of the Guilty - Knowledge Technique: The Effects of Motivation," Journal of Applied Psychology 52(1) (1968): 62-65.

Procedure

Forty-eight college students (sex not specified) were divided into 12 groups to determine the effects of motivation on the detection of deception. In each group there were 3 thieves and 1 innocent subject. Each thief was to attempt to steal a sealed envelope containing a voucher with a value up to $50.00 from a victim. The innocent subject had no knowledge that a crime was to be committed. There were 12 victims and 12 crimes, one for each group.

The study was designed to maximize the involvement of the participants. The thieves worked individually and personally planned the details of their crime. They were told that there were others after the same victim and the first one successful would get the envelope. The voucher could be cashed if the thief deceived the polygraph examiner. There also were to be prizes for the most ingeniously devised crimes whether successful or not. Motivation was varied by size of the voucher. Half of the victims had vouchers ranging from $25.00 to $50.00 while the other half had vouchers worth $0.10 to $1.00. The thieves did not know the value of the voucher held by their victim unless the envelope was obtained. Each thief in each group thought obtaining the envelope was possible. In reality, the situation for each group was structured so that one thief tried but failed, one had no opportunity to attempt the crime, and one who committed the crime. Only the thieves that completed the crime were considered guilty. Thus, there were 12 guilty and 36 innocent subjects.

Subjects were administered a polygraph test using the guilty-knowledge technique. The experience of the polygraph examiner was not discussed. Each test consisted of 6 multiple-choice questions each with 5 alternatives about the crime. Subjects were to listen to all questions and make no verbal response. The first alternative on each question was not scored. The victims had supplied the examiners with some of the details of the crimes, but the examiner did not know the correct answer to each question or who was the criminal. The criminal was the only one who could recognize the correct answer to each question.

Electrodermal activity, respiration, and heart rate were recorded, but only electrodermal activity was scored. Scoring was done without knowledge of the correct answer. Each subject's electrodermal responses to each question were ranked in order of amplitude. If the largest response was to a relevant alternative the question was scored 2. If the second largest response occurred to the relevant question it was scored 1. Other possibilities were scored 0. Subjects with a score of 6 or less were considered innocent. Subjects with a score greater than 6 were considered guilty.

The following results were obtained:

		ACTUAL	
		Guilty	Innocent
Predicted	Guilty (high value vouchers)	6	0
	Guilty (low value vouchers)	5	0
	Innocent	1	36

The difference between motivation groups was not significant. The authors noted that their study used a very involved mock crime with some of the uncertainties of real crimes.

4.4.3 Miroslav Dufek (1969)

Department of Criminalistics Legal Faculty, Charles University, Prague. "A Contribution on the Problem of Polygraph Examinations." Czechoslovak Criminalistics (February 1969). (Tr. from Czech.)

Procedure

Several experiments were conducted investigating detection of deception with guilty information type tests. The authors state they worked with equipment from the Alvar firm and recorded electroencephalograms, electromyograms, electrodermal activity, etc.

Procedure 1

In the first experiment 30 individuals were told to write a random number from 1 to 10 on a piece of paper which they retained during the test. Chance was 10 percent. The experimenter utilized a searching peak of tension test in which the opening words were always (Czech, the equivalent of) "Did you write the number...?" The answer was "No."

Results

Using a searching peak of tension test, the examiner was able to pick the correct number with certainty in 25 of the examinations (83 percent). In three of the remaining five cases, the examiner could not distinguish between two numbers, one of which was correct. In two of the examinations, the number could not be determined.

Procedure 2

The second experiment involved 20 men who examined in detail one of six objects placed before them, then concealed from the examiner the name of the object they handled (a lighter, cigarette, pencil, pen, eraser, or ashtray). The object was to be selected at random from the group. The examiner was blind to the item selected. Chance was 17 percent.

Results

Using a searching peak of tension test, in which the subject did not know the sequence of questions, the examiner detected the correct object in 18 of 20 examinations (90 percent). There were no reactions on which to make a judgment for two other subjects, an inconclusive rate of 10 percent.

Procedure 3

Five men and five women were told to select someone with whom they were closely associated with their personal life, an association of an intimate nature. With the help of an assistant, another 10 first names were selected which had no emotional meaning to the subject. The examiner was blind as to the meaningful name. During the searching peak examination, the subjects denied a relationship with all of the names. Chance was 9 percent.

Validity

The examiner determined the correct name in all ten cases (100 percent).

Procedure 4

Experiment 4 used the same procedures as Experiment 2. The difference was that in this series of peak of tension examinations, the test individual knew in advance the exact order in which the objects would be presented. The purpose was to develope progressive stress, as the correct object was approached, and relaxation following the correct item. Twenty men were tested.

Validity

In these experiments the correct item was selected in 17 of the 20 examinations (85 percent), while three of the examinations did not yield clear reactions to a single item. Instead, in these three cases, there were responses to two of the items, of which one was correct.

4.4.4 Jana Kronbergerova and Miroslav Dufek (1969)

"Experimental Experiences With the Use of Polygraph." Socialist Legality (May-June 1969). (Tr. from Czech.)

Procedure

Ten men (aged 21 to 47 years) were instructed to hide a weapon previously used in a crime of violence in any one of 18 locations. In a subsequent polygraph examination, questions were structured so that it would be possible to get a general specification (such as the building) as well as the floor number and the room of the hidden weapon. The instrument recorded respiration, electrodermal responses, and blood pressure. The first and last questions were control questions (i.e. places that were not possible locations); the remaining questions involved possible hiding places. The number of questions asked was not stated, and it was reported that none of the questions were repeated. Subjects were required to deny the real location. Chance was six percent for detecting the complete location. The method of scoring the polygraph tests is not reported. Examiners are said to be experienced and educated in psychology, physiology and other fields. The authors give insufficient detail about how the polygraph test was conducted.

The experimenters were able to determine the exact location of the weapon in nine of the ten cases. In the tenth, they were able to determine the building and floor, but not the correct room. The examinee reacted more strongly to another room than he did to the room in which he hid the weapon. In retrospect it appeared that he had a strong personal reason to react to the other room.

4.4.5 David T. Lykken (1959)

"The GSR in the Detection of Guilt." Journal of Applied Psychology 43 (6) (1959): 385-388.

Procedure

Forty-nine male college students were assigned at random to four groups. Those in Group 1 (n=13) enacted two mock crimes in random sequence, a "murder" and a "theft." Both crimes required some rather detailed play-acting. Those in Group 2 (n=12) enacted only the murder, and those in Group 3 (n=12) only the theft. Those in Group 4 (n=12) were not exposed to either crime. Each subject was told that he was to be questioned in relation to two crimes. The subject was told that if the experimenter (experience is not discussed) felt that the subject's electrodermal response indicated guilt to any question, the subject would receive an electric shock. An unpleasant shock was then demonstrated. In fact, shocks were given during testing of all the subjects to heighten general anxiety. Each test consisted of two lists of six multiple choice questions - one for the murder and one for the theft. The experimenter read the question and then read each of several alternative answers, with adequate time between them for GSR recovery. The six questions related to details of the crimes known only to the perpetrators (guilty knowledge). The subject was not to reply to any questions. The position of the critical item in each list was varied from one subject to another, and the examiner was in the blind as to which item was critical in each of the lists and was blind to the subject's group. Electrodermal responses to the alternatives in each question were ranked based on amplitude. If the largest response occurred to the relevant alternative it was scored 2; if the second largest response occurred to the relevant alternative a score of 1 was given; otherwise, a score of 0 was given. Scores were summed across questions. A subject with a score of 6 or less was classified innocent; a subject with scores over 6 was classified guilty.

Results

Four subjects from Group 1 and one subject from Group 2 were misclassified as to group. There were six errors in the 98 interrogations (each subject had two interrogations, one for each crime); all of these errors involved classifying a subject innocent when he was really guilty. The following table was constructed from Lykken's presented data:

		Actual		
		Guilty of Two Crimes	Guilty of One Crime	Innocent
Predicted	Guilty of Two Crimes	9	0	0
	Guilty of One Crime	3	23	0
	Innocent of Both Crimes	1	1	12

4.4.6 David T. Lykken (1960)

"The Validity of the Guilty Knowledge Technique: The Effects of Faking." Journal of Applied Psychology 44(4) (1960): 258-262.

Procedure

Twenty subjects (males and females) participated in a study on the validity of the guilty knowledge technique. Each subject initially completed a 25-item questionnaire requiring biographical information. Subjects were subsequently given a test of guilty knowledge using the 25 questions each with 6 alternatives. One alternative pertained to the subject; 4 alternatives to each question pertained to other subjects. The first alternative was a randomly selected item and was not scored to reduce the effects of orienting. The examiner (experience not discussed) attempted to identify the subject's set of questionnaire responses.

Electrodermal activity was measured. Each subject was given a 15-minute lecture on electrodermal activity, lie detection in general, and the principle of the guilty knowledge method in particular. Each subject was allowed to practice (with feedback) producing voluntary electrodermal responses by various methods. The group was told of test format, cautioned not to attempt to defeat the test by inhibiting responses, and advised that the best way to defeat the test would be to produce electrodermal responses of various amplitudes to the innocent alternatives as in random a pattern as possible. Each subject was offered a $10.00 prize if they could defeat the test.

Electrodermal responses to the 5 alternatives (omitting the first item) were ranked based on amplitude. Thus, there was a distribution of ranks associated with each of the 5 questionnaires used for each subject. Each distribution was then given a score by giving a point every time a particular rank occurred more than 5 times. A distribution in which all 25 responses had the same rank would be scored 20. A distribution with each rank occurring 5 times would be scored 0. When no measurable electrodermal response occurred an item was not ranked. The scores for each distribution were compared. Patterns of nonrandom responding (higher scores) were considered indicative of guilty knowledge.

Results

The questionnaire belonging to each subject was correctly identified in all 20 cases. The author notes that this study uses a more comprehensive interrogation than his previous study (Lykken, 1959).

4.4.7 Kazuo Ohnishi, Katsunori Matsuno, Masana Arasuna and Akhiro Suzuki (1976)

"The Objective Analysis of Physiological Indices in the Field of Detection of Deception." Reports of the National Institute of Police Science 29(3) (August 1976): 181-188. Abstract in English.

Procedure

A searching peak of tension test to detect the correct number from six numbers (unknown to the examiner) was conducted during the polygraph examination of 50 suspects in criminal cases in the laboratory of the Osaka Prefecture Police Headquarters. The charts were analyzed numerically at the National Institute of Police Science applying a criterion of rank scores. Chance on each test was 17 percent. The location of the number in the list was unknown to the blind reviewer and no dummy number was inserted at the beginning of each list.

Results

Applying only the rank score of breathing suppression, the detection rate was 46 percent. Applying only the rank score of electrodermal responses, the correct detection of the critical number was 72 percent. Detection with each individual measure was significantly greater than chance. When the two indices were combined, the detection rate was 92 percent.

4.4.8 Robert M. Stern, John P. Breen, Takami Watanabe, and Bradley S. Perry (1981)

"Effect of Feedback of Physiological Information on Responses to Innocent Associations and Guilty Knowledge." Journal of Applied Psychology, 66 (6) (1981): 677-681.

Procedure 1

Experiment 1 involved 24 males and 24 females to determine the effect of feedback on innocent associations. Subjects selected a geometric figure from five possible figures and wrote down their social security number and four additional social security numbers from a provided list. Sixteen subjects received no feedback, 16 received auditory heart rate feedback, and 16 auditory electrodermal feedback while being asked four series of questions. In two series,- subjects were asked if they had picked each of five geometric forms. In another two series, subjects were asked if each social security number was theirs. Subjects were required to respond with no to all questions. The first question of a series was a buffer question to reduce orienting. Detection was based on the electrodermal data with the response to each of the five questions in each series scored from one to five based on magnitude. The mean rank to each question of the two social security number series and the mean rank to each question of the two geometric form series was then computed.

Results

The proportion of subjects showing the largest electrodermal response to the relevant stimulus (their social security number and the selected geometric form) significantly varied with feedback and type of stimulus and is as follows:

(1) No feedback - form (5/16), number (9/16); (2) Heart rate feedback - form (8/16), number (11/16), (3) Electrodermal feedback - form (11/16), number (12/16). Thus, subjects receiving electrodermal feedback were easiest to detect and social security numbers were easier to detect than geometric forms.

Procedure 2

In the second experiment, 26 males and 26 females were subjects in a mock crime situation. All subjects played the role of an American Embassy hostage in Iran. The 26 designated guilty subjects received written instructions (which they were to read three times) about their involvement in a plot to murder the Ayatollah. The 26 innocent subjects received instructions that had some of the same relevant words as those of guilty subjects but involved no murder plot. Thirteen innocent subjects and 13 guilty subjects received auditory electrodermal feedback. The remaining subjects received no feedback. The guilty knowledge technique was used. Ten questions, each with five alternatives, were presented to the subject with the first alternative serving as a buffer and not scored. Four of the ten questions were control questions. Subjects were to make no response to the questions. Responses were scored by the method of Lykken (1959).

Results

Results are demonstrated in the following table:

		Actual	
		Guilty	Innocent
Predicted	Guilty (No Feedback)	12	2
	Guilty (Feedback)	13	1
	Innocent (No Feedback)	1	11
	Innocent (Feedback)	0	12

Thus, 96% of the guilty and 88.5% of the innocents were correctly classified. Electrodermal feedback did not significantly affect detection accuracy.

4.4.9 William M. Waid, Emily Carota Orne, Mary R. Cook, and Martin T. Orne (1978)

"Effects of Attention as Indexed by Subsequent Memory On Electrodermal Detection of Information." Journal of Applied Psychology. (1978) 63(6): 728-733.

Experiment 1

Procedure

Twenty-nine designated guilty subjects and 11 designated innocent subjects (males) participated in a study to determine the effect of attention on detection of deception using a guilty knowledge test. Guilty subjects learned six code words during a series of tasks. Innocent subjects completed a questionnaire during this period. Guilty subjects were told that highly intelligent and mature individuals could deceive the examiner. Care was taken to involve innocent subjects in the procedure. All subjects were told that the way to appear innocent was not to respond during the test. Subjects were tested by an experimenter blind to subject status. Subjects were presented twice a list of 24 words. There were 6 categories of words with each category containing one of the learned code words. A word was considered detected if the code word elicited a larger response than the remaining 3 words in the category. For innocent subjects, one of the four words in each category was arbitrarily designated as the critical word. One category of four words was eliminated from the analysis. Skin resistance was measured. After the polygraph test, subjects were given a list of 115 words and asked to indicate the words heard during the polygraph test.

Results

When the criterion for detection was 3 or more words (chance = 2.5 words), the following results were obtained:

		Actual	
		Guilty	Innocent
Predicted	Guilty	23	3
	Innocent	6	8

Seventy-nine percent of the guilty subjects and 73% of the innocent subjects were detected. Guilty subjects had significantly more critical words detected than innocent subjects.

Guilty and innocent subjects did not differ in percentage of words recalled. Detection in innocent and guilty groups did not appear related to number of words recalled although there were some trends.

Experiment 2

Procedure

Procedure was the same as Experiment 1 with some minor differences. Eighteen guilty and 10 innocent subjects (males) were used. The list of 24 words was presented 5 times. Subjects were tested in groups of 3 to 7 by an examiner in another room. Subjects received the stimuli through headphones and indicated their answers by moving their head. The answer was observed through a one-way window. Subjects were blindfolded so they could not see the other subjects and were told they would receive a shock at the end of the test proportional in strength to the number of detected lies. After the test, subjects were to write down as many of the words involved in the test they could recall. A code word was considered detected if it elicited a larger response than the other three codewords in its category. One category of 4 words was removed from all analysis.

Results

Subjects were called guilty if seven or more critical words were detected (chance = 6 words). The following results were obtained:

		Actual	
		Guilty	Innocent
Predicted	Guilty	11	1
	Innocent	7	9

Sixty-one per cent of the guilty subjects and 90 percent of the innocent subjects were correctly detected.

Guilty subjects had significantly more critical words detected than innocent subjects and guilty subjects recalled significantly more words than innocent subjects. Among guilty subjects correlations between number of words recalled and number of words detected was .48. Detected guilty subjects recalled significantly more words than not detected guilty subjects.

Experiment 3

Procedure

Procedure was the same as Experiment 1 except for minor differences. Fifteen innocent and 15 guilty subjects (males) were tested. The list contained 36 words with 6 words in each category; 1 word in each category was the code word. The list was presented 4 times. One category of 6 words was eliminated from all analyses. Skin conductance was measured. As in Experiment 2, subjects were to write down as many words they could recall after the test.

Results

The following results were obtained when the criterion for detection was 6 words (chance = 5 words):

		Actual	
		Guilty	Innocent
Predicted	Guilty	11	3
	Innocent	4	12

Seventy-three percent of the guilty subjects and 80% of the innocent subjects were detected. Guilty subjects had significantly more code words detected than innocent subjects but there was no difference between guilty and innocents in number of words recalled. Among guilty subjects, number of words recalled was correlated .41 with number of words detected. Detected guilty subjects recalled significantly more words than not detected guilty subjects.

4.4.10 William M. Waid, Emily C. Orne, Mary R. Cook, and Martin T. Orne (1981)

"Meprobamate Reduces Accuracy of Physiological Detection of Deception." Science, 212 (1981): 71-73.

Procedure

Male college students (aged 18 to 24 years) were paid $2 an hour as subjects in an experiment to determine the effect of meprobamate on detection of deception. Subjects designated guilty overlearned six words during timed, interpretated tasks prior to the polygraph test. Innocent subjects performed the same tasks but learned no words. Guilty subjects were told that it was possible to deceive the examiner, whereas innocent subjects were told it is often difficult to prove one's innocence. Guilty subjects were randomly assigned to one of three groups (11 per group). One group was told they were taking a tranquilizer which would help them avoid detection and were given 400 mg. meprobamate. Another group was given a placebo. The third guilty group received nothing.

After 30 minutes, a second experimenter, blind to subject status, administered a polygraph test using the guilty knowledge technique. The question list consisted of 24 words, four in each of six categories. One of four words in each category was a word the guilty subject memorized. The first word of the list was a dummy word. The list was presented twice. The examiner also completed a rating scale about his perception of subject's drug status.

Electrodermal response amplitude, smallest inspiration, and change in relative blood pressure were recorded and scored by technicians who had not observed the test. A subject was classified guilty if his response to the relevant word in each set of four produced a larger response than the remaining three words on five or more sets. In order to analyze data from innocent subjects, one word in each set of four was randomly designated as the critical word.
The following results for each measure were obtained:

		Actual			
		Guilty: No Pill	Innocent	Guilty: Placebo	Guilty: Meprobamate
	Electrodermal				
	Guilty	9	0	8	3
	Innocent	2	11	3	8
	Cardiovascular				
Predicted	Guilty	0	1	2	0
	Innocent	11	10	9	11
	Respiratory				
	Guilty	4	1	3	5
	Innocent	7	10	8	6

Correct classification was reduced significantly in the meprobamate group. Electrodermal activity was a better discriminator between guilty and innocent than the other measures.

The authors note that results were not due to reduced electrodermal responsiveness in the meprobamate group since there were no differences between the groups in average number of critical words eliciting a measurable response and no differences in average response to all questions. Examiners were not able to accurately judge whether or not subjects had received meprobamate.

4.4.11 Kazunoba Yamaoka and Akihiro Suzuki (1980)

Studies on Skin-Blood Flow as an Index of Lie Detection. *Polygraph* 9(4) (December 1980): 232-237*.

Procedure

Seven females and 6 males (aged 18 to 29 years) were subjects in a study to determine the effectiveness of skin-blood flow as an index of lie detection. Subjects selected 1 of 5 playing cards. When the subject was asked about each card during a subsequent polygraph test he was to reply no to all questions. The examiner was blind to the selected card; experience of the examiner is not discussed. Subjects were presented 2 series of questions about each card; each series contained a different question order. The response to the first question was eliminated. Skin potential, skin resistance, and skin-blood flow were recorded. Responses to each question for each system were ranked from 1 to 5 with the largest response receiving a rank of 1. The following results were obtained:

	Number of Successful Detections	Number of Unsuccessful Detections
Skin-Blood Flow	5	8
Skin Resistance	2	11
Skin Potential	10	3

Skin potential was the only response measure able to detect the selected card significantly greater than chance levels.

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*Previously published in *Reports of the National Institute of Police Science* 26 (1973): 206-209. Text in Japanese.

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Mr. **Douglas Gene Williams**. My name is Douglas Gene Williams, and I plead guilty to crimes against humanity. I was a right-wing terrorist. I tortured thousands of people, documented more forced confessions than most Gestapo agents, violated countless constitutional rights, and had absolutely no regard for human dignity.

I was often rewarded for my skillful use of terrorism. There are some truly grim stories behind those official letters of commendation I earned as a police detective sergeant.

I was a highly trained, well-equipped terrorist agent. My specialty was psychological trauma and my weapon was the lie detector.

I am here today to try to undo some of the damage I have done by telling the truth about the lie detector.

The polygraph has been cloaked in shady scientific jargon for over 50 years. Lie detector operators claim an accuracy rate of 96 to 98 percent. It has been endorsed by such bastions of journalism and law as F. Lee Bailey and Jack Anderson. The polygraph has received media validation on a national level. The polygraph has developed into a multibillion dollar business since its invention in the late 1920's, and it is now the longest running con game in the history of this country.

The polygraph is not a lie detector and it is not a truth verifier. The polygraph is simply a crude reaction recorder, and the reactions it records can be indicative of just about anything. Anything except deception. Let me share with you how the polygraph works, and, incidentally, I have a machine here with me if anyone wants a demonstration.

Please look at this exhibit A—correction—B. That is what the polygraph actually records. I think you have been supplied with these. What we have here is a machine that can watch you breathe, watch two fingers on your right hand sweat, and watch your heartbeat. That is all the machine is capable of recording.

During the test the examiner will ask a series of questions and watch for any changes in your breathing, perspiration, and blood pressure. These changes are called reactions.

A casual look at this diagram shows a person's breathing has become erratic, blood pressure is elevated, and the hands are sweating. Does this mean the person is lying? Although it is absurd to come to this conclusion based on such flimsy evidence, that reaction is what polygraph operators refer to as indicative of deception, and that reaction has been the start of many tear-jerking sob stories because that reaction does, in fact, mean you have lied.

I would submit that this exact same lying reaction can be caused by many things other than a lie. As a matter of fact, any number of innocent stimuli can and do cause this exact reaction—fear, rage, embarrassment, a phone ringing, hanging from the cardio cuff, and even the tone of the examiner's voice.

The validity of the lie detector is based on a phony set of 50-year-old pseudo-scientific principles. And even polygraph experts do not have the temerity to refer to the polygraph as a lie detector, preferring words like "investigatory tool" instead. It is certainly a tool, or more correctly, a psychological billy club which allows even the most pusillanimous polygraph operator to become a terrorist. These con men know their profession is a fraud, that it is impossible for them to explain to anyone's satisfaction how they purport to be able to detect deception by simply recording a person's fight-or-flight response.

The piles of propaganda produced by the polygraph profession rival Hitler's propaganda machine. But the largest and most odoriferous pile is their theory of the control question. Simply stated, the control question technique is a method of comparing reactions. For example, if you happen to breath in short, shallow breaths, your fingers start to sweat and your blood pressure increases when the polygraph operator asks you what you have stolen from work, and you breathe calmly and evenly when he asks you if you ate breakfast this morning, you will fail your polygraph test.

The unadulterated stupidity of the control question technique presumes two things that are impossible for the polygraph experts to prove. One, they must prove that only the questions cause a reaction. That it is impossible for any other stimuli to give you that little shot of adrenalin necessary to trigger a reaction. Two, this is even more ridiculous. The polygraph experts must prove that a truthful person will only react to a control question and never react to a relevant question. It seems to me that the accusatory nature of the relevant question is a great deal more likely to elicit a response than some imaginary control question.

Perhaps I am being too harsh. Here are some examples of control and relevant questions. You decide which are the more threatening of the two, which is more likely to cause you to have a fatal reaction.

Can you name anyone in the company who is stealing?

Can you drive a car?

Have you ever used or sold marijuana?

Have you had anything to eat today?

Have you violated any of the company's rules and regulations?

Do you drink coffee?

Remember the polygraph operator will compare your reactions to these two questions; and if you react more to the relevant than to the control, he will call you a liar. Despite what the polygraph proponents may say the whole concept of lie detection via polygraph is nothing but a crock of propaganda.

The preemployment polygraph examination is a setting for some of the worst cases of polygraph abuse because, unlike the criminal suspect, the job applicant cannot refuse the test without suffering as a result of their refusal.

These polygraph examinations are simply an interrogation. The only part the polygraph plays is to sufficiently scare you enough to disclose the sordid details of your past indiscretions.

I could make a good case for the proposition that we have an inalienable right to lie when confronted with a lie detector. Employers routinely circumvent Federal law by simply asking employees to take a lie detector test. Even the Government says it is illegal to ask about arrests and sexual habits in preemployment tests. In fact, many areas are off limits to employers. But the employer can disregard the law by paying a "hired gun" go ask questions he is legally prohibited from asking.

Unfortunately, many people feel they can afford to tell the complete truth to every question put to them on the polygraph test. Their blind faith in the machine is sadly misplaced. The joke is on those who think the system is fair because the lie detector has a built-in bias against the truthful person. As a result, the more honest you are, the better your chances of failing the test. And the real irony is that the reverse is also true.

Anyway, I can tell the complete truth or a complete lie or anything in between and still pass any polygraph test given any time, by anyone, anywhere. Mark Twain said, "If you've done it, it ain't bragging." I have done it hundreds of times and I have instructed thousands of people to do the exact same thing by simply teaching them to distinguish between the control and relevant questions and to duplicate the physical response to fear on demand at the appropriate time. By following the instructions in the little manual that I have published, thousands of people have learned to consistently produce a truthful polygraph chart.

The polygraph profession has accused me of having a myriad of sordid motives for writing this manual. Perhaps their anger stems from the fact that the only power they have is derived from the fear and ignorance of their victims. I only hope I have been successful in tipping the balance of power from the terrorists to the victims by telling some of the tricks of this terrible trade. As to my ex-colleagues' criticism, I would offer this thought for consideration: It would, after all, be the ultimate irony for a lie detector operator to object to the truth.

Mr. **Martinez**. Thank you, Mr. Williams.

[Prepared statement of Douglass Gene Williams follows:]

Prepared Statement of Douglass Gene Williams, Ex Police Sergeant/Polygrapher, Oklahoma City, OK

CONFESSIONS OF A RIGHT WING TERRORIST

My name is Douglass Gene Williams, and I plead guilty to crimes against humanity. I was a right-wing terrorist, I tortured thousands of people, documented more forced confessions than most Gestapo Agents, violated countless constitutional rights, and had absolutely no regard for human dignity. I was often rewarded for my skillful use of terrorism—there are some truly grim stories behind those official letters of commendation I earned as a police detective sergeant. I was a highly trained, well-equipped, terrorist agent, my specialty was psychological trauma, and my weapon was the lie detector.

You have a right to know a little about me before you invest any more of your time, so let me tell you right up front, I'm crazy. Friends and enemies alike agree with my self-diagnosis, they differ only as to the cause of my obvious malady. Some say I was crazy because I quit the cops after eight years' service, and they have a point because I did spend a lot of time and energy preparing for a career only to abandon it when I reached the prime earning years. Others will tell you I cracked under the strain of a guilty conscience, that I went over the edge running from the ghosts of my many victims, and there is some truth in that because I do feel guilty about what I did. The way I see it, I lost it when I decided to try to make restitution for my sins, but I'm from the buckle on the Bible Belt, and out here we are taught that if we sin we must confess and make restitution before we can expect exoneration—this restitution business is driving me nuts!

I was so naive, I really thought I would just write a few letters, appear on a few radio and television shows, expose the polygraph to the light of public scrutiny, and bingo, the damn thing would be outlawed and banned forever, a fate it so richly deserves. I reasoned that since I was able to terrorize people with the polygraph only because they believed all the lies I pumped into them about how it works, I could make restitution by telling the truth about the lie detector. To date, I have been a guest on over twenty radio talk shows, I have been featured in dozens of television, radio, and newspaper interviews, I have testified in legislative committees, I have spoken at colleges and universities, put on seminars, given personal instruction to thousands of people. . . It's embarrassing, people are starting to say I'm obsessed, and having undergone the introspection necessary to write this, I agree. I am obsessed with this crusade against the polygraph or I would not have continued so long in the face of so much flack. It amazes me how difficult it is to stop the use of this insidious Orwellian instrument of torture. For the past seven years, I have attacked the use of the lie detector, using the weapons of education, litigation, and legislation, yet, the size and power of the polygraph industry has increased massively since 1978, President Reagan has expanded it's use to unprecedented proportions, (five million federal employees), there are major set-backs on every front, but the war goes on, and I am in for the duration.

My crusade, or as others have called it, the quixotic adventures of a mad-man, began when I wrote a manual to assist in training my sister to take her first polygraph test. The manual as later printed, and the underground circulation is now approaching a million copies. While I have yet to recover the cost of printing the original two thousand, there are rewards in other areas, for example, I really feel good when I can remove the fear people have of the lie detector. I value those one-on-one experiences I have when I take my polygraph and my manual and explain the lie detector "hokus pokus" to people. I ask them to remember their initial feelings for the machine before we begin, and to compare them with how they feel twenty minutes later. The feeling I get when I watch their faces as their attitude toward the polygraph changes from fear, anxiety, and apprehension, to scorn, relief, and elation, is motivation enough for me to continue. My preacher poppa used to say, "It's not much pay, but it's cash".

Granted, my poorly writtten manual and my one-man polygraph show are woefully inadequate to the task of overcoming the fifty years of propoganda dispensed by the polygraph industry, but the manual is the only one of its kind ever written, and to my knowledge. I have the dubious distinction of being the only licensed polygraph examiner to ever "blow the whistle". My problem is I can't figure out where to blow the whistle! If you wanted to report the atrocities involved in lie detector testing, and expose it for the sham that it is, to whom would you report? I have "reported" my information to people and organizations as diverse as President Reagan, The Playboy Foundation, James Baker III, Richard Hauser, Jack Anderson, CBS 60 Minutes, various chiefs of police—both city and state, Phil Donahue, The National Examiner, The U.S. Congress, The Office of Technology Assessment, CIA, FBI, NSA, . . . the list goes on, and is growing daily.

On the litigation front, there has been some activity in the quest for judicial relief. Justice is a very expensive commodity nowadays, something many polygraph victims have thus far been unable to afford. However, there is power in numbers, and class action lawsuits might buy a little "justice for all". I suggest talking to your attorney about getting a restraining order against your local polygraph examiners, this puts the burden of proof on them to prove the machine actually works as a lie detector. You might also consider going as a group to solicit his assistance on a class action law suit alleging mal-practice on the part of the polygraph examiner; you can show damages as the loss of jobs, reputations, freedom, (there are millions of victims of this machine). You should also advise your attorney that most polygraph examiners carry massive amounts of liability insurance. Watch your local newspaper for the lawsuit being filed near you, or file your own small claims action for less than twenty dollars.

The legislative front is the most promising at this writing, but after over seven years of fighting, I try not to get my hopes up too high. The Honorable Jack Brooks, U.S. House of Representatives, has been a champion of polygraph victims for a number of years, and has reintroduced H.R. 4681 as H.R. 39 in yet another attempt to bridle President Reagan's enthusiastic expansion of the government's polygraph program. Every polygraph victim should support and encourage Rep. Jack Brooks' efforts, and encourage your own congressmen to follow the Statesman from Texas and move forward with much needed legislation banning this instrument of fear.

Every study commissioned by the U.S. Congress, from 1963 to 1983, has concluded that there is no scientific basis for the use of the polygraph as a lie detector. The scientists have recommended prohibiting the use of the lie detector for over twenty years, yet the best we can manage is a worthless Resolution setting in some committee on Capitol Hill. What we need is a law banning the damn machine, and we have needed it for over twenty years!

Employers routinely circumvent federal law by simply asking employees to take a lie detector test. Even the government says it is illegal to ask about arrests and sexual habits in a pre-employment test, in fact many areas are off-limits to employers. But the employer can disregard the law by paying a "hired gun" to ask questions he is legally prohibited from asking. Polygraph examiners answer to no one but themselves, the courts refuse to act, and even our own president cheers them on and expands their evil industry.

I could make a damn good case for the proposition that we have an inalienable right to lie as long as we must submit to the lie detector. If you must answer illegal questions, why not lie? Most of the juicy information I gleaned during polygraph sessions was in response to illegal questions. Do you have the right to lie in response to an illegal question? I would maintain that you have not only the right but the responsibility to lie.

Unfortunately, many people feel they can afford to tell the complete truth to every question put to them on a polygraph test. Their blind faith in the machine is sadly misplaced. The joke's on those who think the system's fair, because the lie detector has a built-in bias against a truthful person, as a result, the more honest you are the better your chances of failing the test, and the real irony is that the reverse is also true.

Anyway, I can tell the complete truth, or a complete lie, or anything in between, and still pass any lie detector test given any time, by anyone any where. Mark Twain said, "If you've done it, it ain't bragging". I have done it hundreds of times in scores of cities, I have taught thousands of others to do the exact same thing, and I will continue to do so. When you have exhausted all legal remedies, you must get creative in your opposition—thus the Sting Technique.

If you are one of the twenty five million people who are required to submit to a polygraph examination, you may want to prepare for your test as you would any other, by reading up on the techniques used in testing, the criteria used in evaluating the results, in general, you would like to get a feel for the test, after all it could mean a great deal to you. Passing or failing a polygraph test is as important, as the difference between freedom or imprisonment, employment or starvation, but I defy you to find even one book that will assist you in preparation for your polygraph examination. You may be fortunate to find one or two books relating to the subject, but you will find they are written by and for polygraph examiners, and provide you with little real insight, or they are philosophical treatises lamenting the problem, but providing no real solutions.

Because of the lack of information about the subject, many people have their own schemes to deal with the polygraph. I have heard just about all of these plans, borne of adject fear and desperation, from the tumb-tack under the toe, to the homemade mind control techniques. Some people are even foolish enough to "just tell the truth". The only thing they all have in common are lie detector horror stories—stories of lost jobs, lost freedom, destroyed lives—the real detector story.

The polygraph has been cloaked in shady scientific jargon for over fifty years, lie detector operators claim accuracy rate of ninety-six to ninety-eight percent, it has been endorsed by such bastions of journalism and law as Jack Anderson and F. Lee Bailey, and it has received "media validation" on a national level. The polygraph has developed into a multi-billion dollar business since its invention in the late 20's and it is now the longest running con game in the history of the country. It should perhaps be noted that the good old USA is the only country in the world that uses this so-called lie detector.

The polygraph is not a lie detector, and it is not a truth verifier, the polygraph is simply a crude reaction recorder, and the reactions it records can be indicative of just about anything—anything except deception.

Let me share with you how the polygraph works, and you decide if it is a lie detector or a sick joke. Please look at Exhibit A to see what the machine actually records. As you see, the polygraph operator can watch you breathe, watch two fingers sweat, and he can watch your heart beating contrary to popular polygraph propaganda, that is all the machine is capable of recording.

During the test, the examiner will ask a series of questions, and watch for any changes in your breathing, perspiration, and blood pressure, these changes are called reaction. A casual look at the diagram in Exhibit B shows the person's breathing has become shallow and erratic, the fingers are sweating, and the blood pressure is elevated. Does this mean the person has lied? Although it is absurd to come to this conclusion based on such flimsy evidence, that reaction is what polygraph operators refer to as "indicative of deception", and that reaction has been the start of many tear-jerking, sob stories, because that reaction does in fact mean you have lied.

It is a sound scientific principle, is it always true, as polygraph experts would have you believe, that every time you lie, your breathing becomes erratic, your fingers start to sweat, and your blood pressure increases? Conversely, is it also true that every time you react thusly, you have lied?

A while back, I corresponded at some length with various functionaries in the White House concerning the Presidential Directive of 1984, which requires approximately five million government employees who have access to classified material to submit to a polygraph examination during investigations of leaks of classified material to the news media. I wrote to President Reagan cautioning him against relying on the results of this antiquated instrument. I shared with him what we have just discussed, and pointed out that a tense situation can cause the same reaction that the polygraph brands as a lie. For example, I said, Mr. President I'm sure that when you call a news conference, and the question are tough and probing, your fingers begin to sweat, your breathing becomes somewhat labored and erratic, and your blood pressure increases. Does this mean you are lying? Certainly not, you are simply nervous. However, if you were hooked up to a lie detector, you would show "reactions indicative of deception". The President must not have followed my logic, because he signed the directive.

I would submit that this exact same "lying reaction" can be caused by many things other than a lie, as a matter of fact, any number of innocent stimuli can and do cause this exact same reaction—fear, rage, embarrassment, a phone ringing, pain from the cardio cuff, and even the tone of the examiner's voice. The validity of the lie detector is based on a phony set of fifty year old pseudo-scientific principles, and even polygraph experts do not have the temerity to refer to the polygraph as a lie detector, preferring words like "investigatory tool" instead. It is certainly a tool, or, more correctly, a psychological billy club, which allows even the most pusillanimous polygraph operator to become a terrorist. These two-bit con men know their profession is a fraud, that it is impossible for them to explain to anyone's satisfaction how they purport to be able to detect deception by simply recording a person's fight or flight response.

The piles of of bullshit produced by the polygraph profession rival Hitler's propaganda machine, but the largest and most odoriferous pile is their theory of the "control question". Simply stated, the control question technique is a method of comparing reactions. For example, if you happen to breathe in short, shallow breaths, your fingers start to sweat, and your blood pressure increases when the polygraph operator asks what you have stolen from work, and you breathe calmly and evenly when he asks if you ate breakfast this morning, you will fail your polygraph test. The unadulterated stupidity of the control question technique presumes two things that are impossible for the polygraph experts to prove. One they must prove that only the questions cause a reaction, that it is impossible for any other stimuli to give you that little shot of adrenalin necessary to trigger a "reaction". Two, and this is even more ridiculous, the polygraph experts must prove that a truthful person will only react to a control question, and never react to a relevant question. It seems to me that the accusatory nature of the relevant question is a great deal more likely to cause a reaction than some imaginary control question. But perhaps, I'm being too harsh, here are some more examples of control and relevant questions, you decide which is the more threatening to the two, which is more likely to cause you to have the fatal REACTION.

Relevant—Can you name anyone in the company who is stealing?
Control—Can you drive a car?
Relevant—Have you ever used or sold marijuana?
Control—Have you had anything to eat today?
Relevant—Have you violated any of the company's rules and regulations?
Control—Do you drink coffee?

Remember, the polygraph operator will compare your reactions to these two questions, and if you react more to the relevant than to the control, he will call you a liar. Despite what the F. Lee Bailey's and other polygraph proponents may say, the whole concept of lie detection via the polygraph is nothing but a crock of propaganda.

I can prove the polygraph is not a lie detector, but if you must submit to the machine in order to preserve your freedom, your job, or your reputation, a mere debate as to its validity won't help much. You probably already know the lie detector is a joke, but you may not know how to protect yourself. It is easy to protect yourself from a con man—he can't con you if you know how his scam really works, likewise, a polygraph operator can't convince you the polygraph is a lie detector if you understand how the machine works. Unfortunately, sometimes you don't have the option to refuse to play the lie detector con man's game, take the damn test or get fired is about the only option available in the real world. This situation requires you to take an additional step to protect your rights to privacy, you must con a con man, that is, you must deliberately control every tracing on the polygraph chart without the polygraph operator ever knowing or even suspecting you have done so. If you can control your bowels, you can control your polygraph test results—just read the next few pages carefully, and you will be able to pump out a "truthful" polygraph chart any time you please.

You can easily control every tracing on the polygraph chart, First, please look at Exhibit D as we learn to control the most important of the three, the breathing pattern. Remember your breathing is being recorded, and you want to show the polygraph operator that you do not react to relevant questions. To accomplish this, you must simply breathe in a calm, even, restful manner when you answer a relevant question. You want to appear as though you are not conscious of your breathing while you secretly control every breath you take. When you answer a relevant question, you must breathe slowly and regularly—take care to inhale and exhale approximately the same amount of air each time, and go slowly. If your sting is to be successful, you must learn to control your breathing without being obvious.

Notice the difference between the two diagrams in Exhibit D. The normal pattern is like the waves of a gently rolling sea. The controlled breather shows his attempt to control by thinking only in terms of breathing in and out, he forgot to pause and round off the waves, as a result he doesn't look very calm. The normal breathing pattern is what you must show the polygraph operator when you answer a relevant question. Please practice the normal pattern by tracing the diagram with your finger as you breathe in and out. Practice until you can control your breathing, without being obvious, for as long as five minutes at a time.

Now that you know how to show a normal breathing pattern when you answer a relevant question, the next step is to learn to show a reaction when you answer a control question. The diagrams in Exhibit E demonstrate five examples of a breathing reaction. This is your way of showing the polygraph man that the control questions cause you to react. These range in difficulty from simply panting with your lungs full, or gasping with your lungs empty, to just plain holding your breath. Please practice one of these breathing reactions until you can do it automatically, but don't get too dramatic, just how a clear change from your "normal" breathing pattern when you answer a control question.

O.K. so you manage to show a "normal" breathing pattern when you answer a relevant question, and you can show a breathing "reaction" when you answer a control question, but what about your blood pressure? Please don't take drugs, they will only make you easier prey for a skilled interrogator, and don't step on a tack inside your shoe, you will only hurt yourself. Just beating the operator is not enough, you have to sting him—and remember a sting is when you con a con man and he never knows he has been conned. If you are going to sting, you must use your stinger. Please turn to Exhibit F as we discuss a well-known phenomenon associated with your stinger, or more correctly, your anal sphincter muscle. I became well acquainted with the phenomenon know as the "pucker factor" during my military and police careers. The pucker factor is simply an indice for fear. The higher the danger level, the higher the pucker factor. For example, every time a gun was pointed in my direction, the pucker factor got very high, and my butthole started pinching holes in my shorts. What happens, I asked myself one day, if you're not really frightened but you pucker up your butthole just like you do when you are really scared, does it look like a blood pressure increase, or as polygraph operators say, a cardio reaction? Yes, if you tighten up your anal sphincter muscle, like you are trying to stop a bowel movement, you can cause magnificent increase in the cardio tracing immediately. The anal sphincter muscle, when tighted or puckered up, causes a rise in the cardio tracing which leads the polygraph operator to believe you have had a real reaction.

This manipulated cardio reaction also causes a corresponding GSR reaction, because when your blood pressure increases, your sweat activity also increases. All you are doing is duplicating the physical response to fear, and you are doing it deliberately, on demand, at the appropriate time. When you are frightened, you breathe in shallow, erratic, panting gasps, your butthole puckers up, your blood pressure increases, and you start to sweat. If you do all these things when you are not frightened, it still looks the same on the polygraph chart. A pant is a pant, and a pucker is a pucker, whether real or manipulated. As one of my students once said, "The Sting Technique is just acting like you're scared when you ain't, and acting like you ain't when you are".

Just knowing how to show a reaction, and how to keep from showing one is not enough, you must also know when, therefore, you must be able to recognize both relevant and control questions as soon as you hear them. The polygraph profession has not agreed upon what constitutes a good control question, (largely because there is no such thing as a good control question), as a consequence there are three equally stupid theories concerning the control question. Each group is certain the others are dead wrong, and I say they are all full of fertilizer. Let me share with you a little inside information about the three types of control questions presently in use, so you too can marvel at the stupidity of the polygraph profession.

The first category of control questions are called known-lie questions. They are called this because the polygraph operator assumes you will lie to them, and, if you want to pass your test you will lie. The most common known lie control question is, "Have you ever stolen anything?". The operator will insist that you make some admissions to this question during the pre-test interview, and some will go to great lengths to "stimulate" you with this question. Play along with his silly game, admit a few childhood thefts, but do not say anything incriminating. Most people "flunk" their polygraph tests because of admissions to "control" questions during their "pre-test" interview. The known-lie control questions are matched to the situation, for example if you are being tested about a theft, the control question may be, "During your entire life, have you ever stolen anything?" If you are a rape suspect undergoing a lie detector test to prove you have been raped, the control question may be, "Have you ever engaged in any unusual sex acts?" or "Have you ever deliberately hurt anyone?" Pre-employment tests usually use as one of the control questions, "Have you ever stolen anything from a place where you worked?" Do not tell these purveyors of information anything you don't want everyone to know, because every scrap of information they glean from you is either for sale to the highest bidder or already sold.

In my humble opinion, everything about the lie detector is totally irrelevant, but the second category of control questions is even labeled as such. The irrelevant control questions are easily recognized because they are usually absurdly irrelevant. For example, assume you are being tested concerning a leak of confidential information from the CIA headquarters, some of the irrelevant control questions asked during the test may be, "Can you drive a car?" or "Do you smoke?" The operator will probably ask you to explain your reactions to the irrelevant questions, so have a good story ready. If he asks why you reacted so muct to "Can you drive a car?" tell him you almost had an accident on your way to his office.

The third category of control questions deal with surprise, or embarrassing personal questions. These are even more absurd than the irrelevants, and may include something like, "Did you masturbate this morning?" Fortunately, only the worst of the verbal voyeurs in the polygraph profession still use this type of control question.

Timing is important! You must show both a breathing and blood pressure reaction simultaneously when you answer a control question, and you must appear calm, relaxed, and breathing normally when you answer a relevant question.

A relevant question is obviously one that pertains to the issue at hand, for example, if the polygraph test is about a theft, the relevant questions are, "Did you steal the whatchumacallit?", "Do you know for sure who stole the whatchumacallit?", "Right now, could you take me to the stolen whatchumacallit?", etc. If you are not sure whether a question is relevant or control, assume it is relevant and do not show a reaction.

Your mastery of the "Sting Technique" is almost complete, the only area left unexplored is how to conduct yourself during the interrogation. The sole purpose of the polygraph test is to get incriminating information from the subject, therefore the polygraph operator is usually an expert interrogator, and like most interrogators, he relies on his ability to con you or scare you. Do not allow him to do either, concentrate on what you are saying, and what you are doing. Stay alert, remember the polygraph is a joke, and the operator is playing a con game, a game you will win if you use the Sting Technique correctly.

The pre-employment polygraph examination is the setting for some of the worst cases of polygraph abuse because, unlike the criminal suspect, the job applicant cannot refuse the test without suffering as a result of the refusal. These polygraph examinations are simply an interrogation, the only part the polygraph plays is to sufficiently scare the hell out of you so as to insure the full disclosure of all the sordid details of past indiscretions. During the pre-test interview, the operator may tell you the reason he is asking so many questions is to get to know you better so he can administer a good test. He may also tell you that passing the test is more important than any admissions you make, and that it will be to your advantage to tell the complete truth in order to pass the exam. He will exhort you to "get everything off your mind, discuss anything that is worrying you, so that nothing interfers with your polygraph test", do not be deceived, these are merely interrogation tricks designed to try to get you to change your goal. What is your goal in taking a pre-employment polygraph examination? Is it to "tell the complete truth" to every wormy, prying, personal question the polygraph operator chooses to ask? If so, you will not get the job. Your original goal is to get a job, you are trying to sell yourself to a prospective employer so you naturally put emphasis on your most positive attributes, your ability, training, education, energy, etc. The polygraph con man will try to change your goal by telling you that in order to get the job, you must pass his polygraph test, and in order to pass, you must "tell the complete truth" to all the questions he asks in the pre-test interview. Your goal then will be to spill your guts in front of the video camera while he sits back and prods you into disclosing information you will never tell another person. Do not allow the interrogator to turn the polygraph room into a confessional! Perhaps you cannot refuse to answer these illegal questions, but you can control the amount of information you give. Do not buy into the polygraph operator's lie that he will respect the confidentiality of what you tell him, every word you say is being recorded and will be played back to the person paying for the test. Audio and video recorders and cameras, as well as the ever present see-through mirrors on the wall, with the adjacent observation room to witness the proceedings, are all a part of the well-equipped polygraph suite.

Another interrogation technique, commonly referred to as the "stim", or, stimulation test, is a method by which the examiner will try to impress you with the accuracy of the lie detector. First he will make a big show of shuffling a deck of cards as he describes, or more often lies about, the function of each of the polygraph attachments. (See Exhibit C) He will then hook you up to the machine, placing the pnuemograph tubes around your chest and stomach, (ladies please wear a heavy bra for your own protection), a cardio cuff around your left arm, (which will hurt like hell, but you must endure in silence because polygraph operators all know that only liars complain about the cuff pain), and electrodes on two fingers of your right hand. The operator will go into great and boring detail explaining how the polygraph works, and it may be hard for you to play dumb when you hear the fantastic claims some of these people make. Bear in mind that the only reason he is putting the attachments on you is to try to intimidate, to make you feel uncomfortable, restrained, and totally under the control of the interrogator and his machine. Appear suitably subdued, but remember you are in charge of this con game now. At the conclusion of the little intimidation ritual, the operator will ask you to pick a card from the deck he was shuffling earlier. He will tell you which card you picked after you deny picking any of them on the polygraph test. "You will react to a lie, no matter how small, even if all that's at stake is which card you picked", he will proclaim proudly. This is simply another trick—when he diverted your attention with the attachments, the operator swapped for a marked deck and he knew your card the moment it was pulled. You may turn this to your advantage by providing him with a good reaction when you say no to the card you picked. Play his game, but do it your way. Assume you pick card number five out of a "randomly numbered deck", you should manipulate a breathing and blood pressure reaction when you answer no to this question. This will accomplish two things; first it will show him you are a "good subject" that you have the ability to react, and secondly it will cause him to look for that specific reaction on the real polygraph test.

The polygraph operator who is not well versed in the fine art of interrogation, (and those who have gone crackers from too much hog killin'), may try to terrorize you with loud yelling, hostile accusations, and threatening gestures, some have even been known to get a little physical. Do not tolerate physical violence, but don't confuse noise with violence, this type is easy to handle, just remain calm, and appear confused by this anger, he will wear out and leave you alone if you do not respond. Stick with your story, and let him rant and rave, while you think about cartoons or something.

Always appear cooperative, act sincere, use plenty of eye contact, stay alert, never exhibit any hostility or arrogance, and you can counter any interrogation technique the polygraph operator can throw at you.

Please practice before you go one-on-one against a professional. Use these sample examinations to prepare yourself, each has a different set of control questions and deals with a different set of circumstances. If you are prepared to handle these, you can handle any type of polygraph test, but please practice.

The first test is based on the following set of circumstances. You are a twenty-seven year employee of the CIA, and, thanks to President Reagan, you are required to submit to a polygraph test or be terminated. The purpose of the test is to determine who leaked a story to the Washington Post. The questions you may encounter by a practitioner of the known-lie control question technique are listed below.

1. Do you live in the United States?
2. Is your name Harry Jones?

(R) 3. Do you know for sure who gave that information to the Washington Fost?

(R) 4. Did you give that information to the Washington Post?
(C) 5. Beside the harmonica at age six, have you ever stolen anything else?
(R) 6. Can you name the "informed sources" quoted by the Washington Post?
(R) 7. Have you lied to me about leaking classified information?
(R) 8. Have you lied to me on any of these questions?
(C) 9. Besides the ball point pens, have you ever stolen anything else form work?
(R) 10. Are you now concealing any information whatsoever about the leaks of classified material?

With questions one and two, the examiner is allowing you time to become accustomed to the sound of his voice, this gives you time to start your normal breathing pattern.

Question three is your first relevant question. You should listen to the questions only to determine whether they are relevant or control, don't let the operator "psych you out", remember this is just a game, and all you must do is breathe normally.

Question four is the most relevant question. Simply picture the normal breathing pattern in your mind and produce it on the polygraph chart.

Question five is your prime control question. Because it is less incriminating than the other control, you should manipulate your largest reaction to this question. Remember to breathe erratically, and tighten up your butthole for about seven seconds, but for chrissake show a little class, do it subtly.

Don't react to questions six, seven, and eight. Do react, but less so, to question nine, and don't react to ten. It's so easy, it's almost boring right?

Stay alert! The operator may ask you to say yes to all the questions you had previously answered with a no. Don't let him throw you, it's just another trick, and all you must do is reverse your reactions to comply with your new answers. In other words, just react to the relevants since he is requiring you to lie, and show him your largest reaction to the most relevant, but don't react to the control this time.

The scenario for the second polygraph exam is as follows: You have applied for a job, the brain damaged personnel director asks if you will submit to a pre-employment polygraph examination, assuring you that it is just a formality. Don't tell him he will be paying a hundred dollars just to record you performing a few breathing exercises, and puckering your butthole, he probably wouldn't believe you anyway. The questions you may encounter if the examiner is a graduate of the Irrelevant control question school are listed below.

1. Is your first name Janine?
2. Do you live in Dallas?
(R) 3. Did you tell the complete truth on your job application?
(R) 4. Have you ever been arrested?
(R) 5. Do you drink? . . . (more than just occassionally?)
(C) 6. Can you drive a car?
(R) 7. Have you ever used or sold narcotic drugs?
(R) 8. Are you now concealing any information about your previous work record?
(R) 9. Are you behind on any of your bills?
(R) 10. Have you told me the complete truth about how much you owe?
(C) 11. Did you eat breakfast this morning?
(R) 12. Have you told me the complete truth about your physical condition?
(R) 13. Is there anything in your background that would disqualify you from getting this job?
(C) 14. Were you born in Texas?
(R) 15. Have you lied to me about what you have stolen from previous places of employment?
(R) 16. Is there anything in your personal life that might interfere with your employment?
(R) 17. Do you gamble? (more than what you've told me?)
(R) 18. Have you lied to me on any of these questions?
(C) 19. Are you really 30 years old?

A good way to practice your Sting Technique is to have a friend read the questions to you, allowing an interval of about fifteen to twenty seconds between questions. You should answer the questions aloud with a yes or no while at the same time manipulating or controlling your reactions to these questions.

The third practice test is a periodic polygraph examination. This Gestapo-type test is usually given every six months to employees "picked at random" from the work force. The questions you may encounter in the Embarrassing Personal control question technique, (the imaginative perversion of the polygraph profession never ceases to amaze me), are listed below.

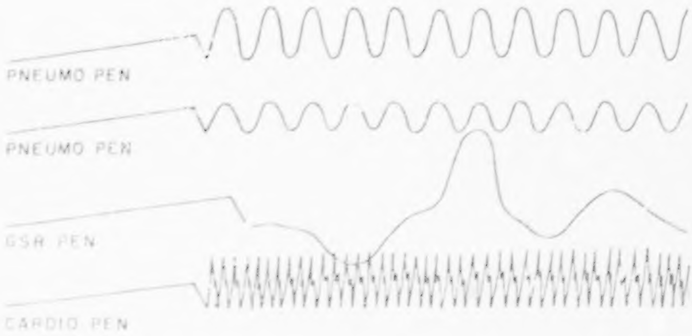
1. Is you last name Jones?

2. Were you born in Oklahoma?
(R) 3. Can you name anyone in the company who is stealing?
(R) 4. Have you stolen anything from the company in the past six months?
(C) 5. Is "J" the tenth letter of the alphabet?
(R) 6. Have you violated any of the company's rules and regulations?
(R) 7. Are you working with anyone to steal from the company?
(R) 8. Have you devised a plan to steal from the company?
(C) 9. Have you even had sex with an animal?
(R) 10. Do you use or sell drugs?
(R) 11. Have you ever used drugs or alcohol on company time?
(R) 12. Are you covering up for anyone who is cheating or stealing from the company?
(C) 13. Do you masterbate?
(R) 14. Have you lied to me on any of these questions?
(C) 15. I am now going to ask you a very personal and embarrassing question, have you ever ....?

You should have no difficulty manipulating a reaction to some of these control questions, but please practice before you go. One other quick tip, the operator may ask you which questions you remember out of them all, always say you remember the control questions, because that indicates they troubled you the most. Never indicate by words or reactions that the relevant questions cause you any trouble whatsoever.

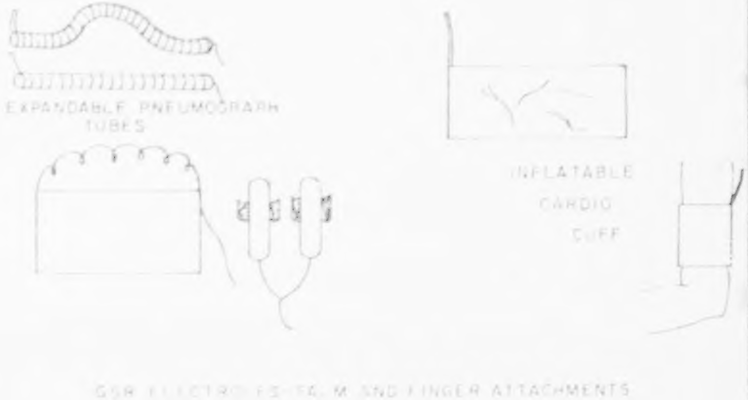
The polygraph profession has accused me of having a myriad of sordid motives for writing this little manual, perhaps their anger stems from the fact that the only power they have is derived from the fear and ignorance of their victims. I only hope I have been successful in tipping the balance of power from the terrorists to the victims by telling some of the tricks of this terrible trade. As to my ex-colleagues' criticism, I would offer this thought for consideration. It would, after all, be the ultimate irony for a lie detector operator to object to the truth.

EXHIBIT A



Pneumo Pens - record your breathing or respiration. When you inhale, the pens go up. When you exhale, the pens go down.
GSR Pen - records increase or decrease in your sweat activity or perspiration.
Cardio Pen - traces heart beat and records changes in your blood pressure and pulse rate.

EXHIBIT "C"


EXPANDABLE PNEUMOGRAPH TUBES
INFLATABLE CARDIO CUFF
GSR ELECTRODES-PALM AND FINGER ATTACHMENTS

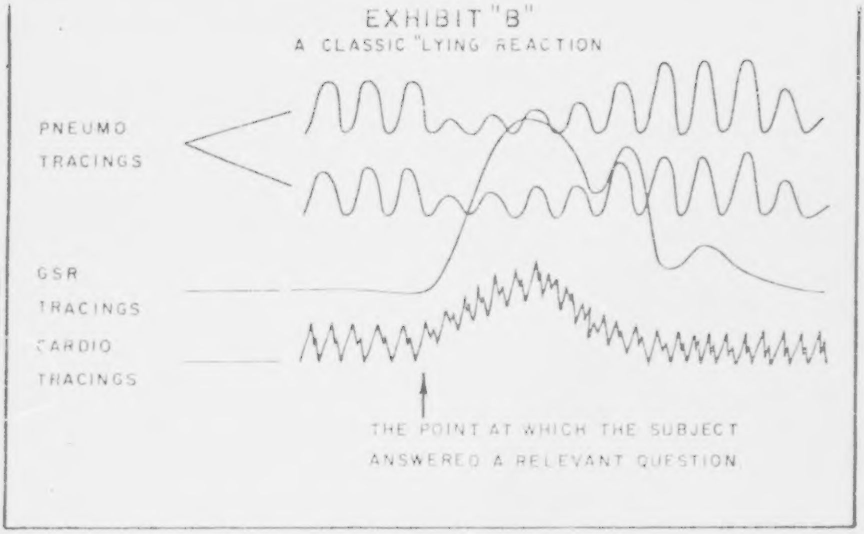


EXHIBIT "B"

A CLASSIC "LYING REACTION

PNEUMO TRACINGS
GSR TRACINGS
CARDIO TRACINGS
THE POINT AT WHICH THE SUBJECT ANSWERED A RELEVANT QUESTION

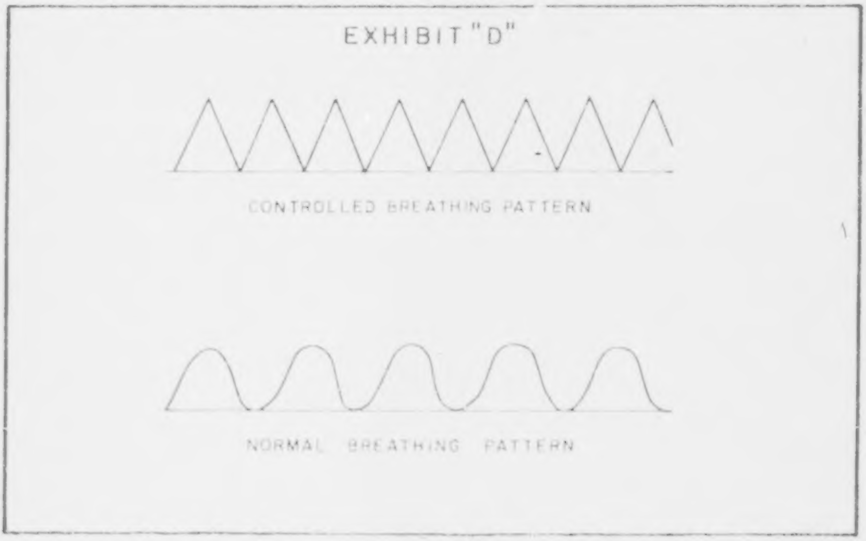


EXHIBIT "D"

CONTROLLED BREATHING PATTERN
NORMAL BREATHING PATTERN

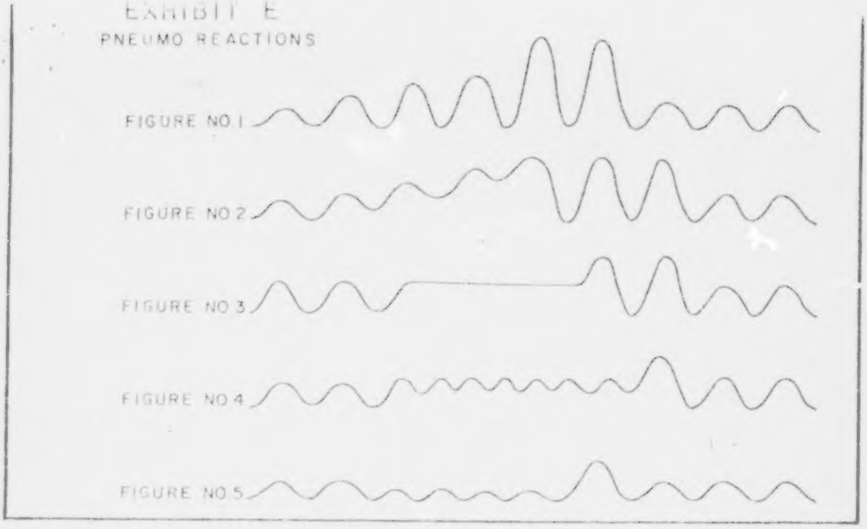
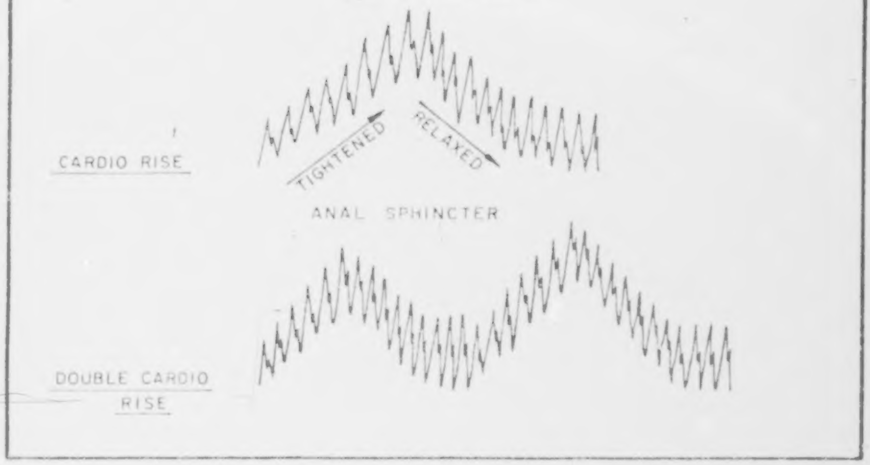


EXHIBIT E
PNEUMO REACTIONS

FIGURE NO.1
FIGURE NO.2
FIGURE NO.3
FIGURE NO.4
FIGURE NO.5

EXHIBIT "F"

CARDIO REACTIONS


CARDIO RISE
TIGHTENED
RELAXED
ANAL SPHINCTER
DOUBLE CARDIO RISE

Mr. MARTINEZ. I have one question and it stems from what you said near the end of your testimony. I assume that what you said was that you can fool the polygraph examiner and you can teach other people to do it, too.

Mr. DOUGLAS GENE WILLIAMS. Yes, sir, I can and have consistently. The polygraph records breathing, blood pressure, and your pulse rate, sweat activity on your hand. This is what you should look like when you are answering a relevant question—calm, even breathing pattern. When you answer a control, you should indicate that this upsets you. All I do is teach people, One, how to distinguish between the questions, two, I hook them up on the polygraph and teach them to physically manipulate their response to fear. Now what happens, you are afraid? The autonomic nervous kicks in a little bit of adrenalin and what happens? You start to breathe erratically, panting and gasping for breath, your hands become sweaty and your blood pressure increases.

Any erratic change, this is what the polygraph profession labels as a staircase breathing pattern. There are about five breathing patterns. I just teach a person to duplicate that breathing pattern when they are confronted with a control question, and to duplicate the response to fear.

Now it took a while. I was asked by a friend of mine on the police force when I was running these: "Bearing in mind that you are an expert, if you were confronted with a polygraph test, could you pass it?"

I said, "Well, I can certainly control my breathing. I can appear to be calm and reasonable when I am answering a relevant question; and I can appear, through my breathing tracing, to be upset when I answer a control question. But how do I handle the sweat activity and the blood pressure?" I couldn't figure that one.

About 3 or 4 weeks after I had confronted myself with this problem, one of my friends came in and said, "Hey," he said, "we got in a chase last night." And he said, "Man," he said, "that guy was going well over a hundred miles an hour. And my partner was driving the car and he lost control. We went out across a bar ditch, tore out a barbed wire fence and went out into a pasture at 100-miles an hour." And he said, "Man, I was just pinching donuts out of that chair."

I said, "What?"

He said, "Yes." He said, "You know how when you get upset you just kind of pucker up like this."

I sat down immediately, hooked myself up to a polygraph machine and duplicated what your body normally does when it is confronted with stress. It looks exactly the same on the polygraph, and there are at least 2,000 documented cases that prove that a polygraph examiner cannot tell the difference.

Mr. MARTINEZ. Thank you. The reason I asked that question is because, if you remember, earlier I stated that we had a particular individual on a department that could teach people to do it. And he did it in precisely the way you have described. So I know for a fact that you can teach people to fool the lie detector.

I would like to ask Mr. Barefoot a question. In your statement you indicated that 40 percent of inventory shrinkage is due to theft, employee theft. Were you figuring 40 percent of the total loss as inventory shrinkage, or is that just what you consider—how do you determine inventory shrinkage?

Mr. BAREFOOT. Well, inventory shrinkage is determined by taking a physical inventory at the end of the fiscal year and comparing it with the book inventory. That is how you get your physical.

Mr. MARTINEZ. So that is what you are referring to in that statement?

Mr. BAREFOOT. That is how you come up with an overage or a shortage or whatever you may have.

Mr. MARTINEZ. Let me term it a little differently and see if it is still what you are considering. You have a certain percent of inventory, let us say 100 percent inventory at the beginning of the year. And at the end of the year you are losing 40 percent of that inventory. And so you are saying then 40 percent of that inventory is due to employee theft?

Mr. BAREFOOT. That was the statement that was made by the retail industry.

Mr. MARTINEZ. Well, I would suggest then that the percentage is wrong because during that year there was also a lot of shoplifting, which is prevalent in retail markets.

Mr. BAREFOOT. But you are only talking about 40 percent.

Mr. MARTINEZ. Well, you said 40 percent of the total loss.

Mr. BAREFOOT. Forty percent of the shrinkage, of the loss.

Mr. MARTINEZ. Well, how much was the loss then? That is what I asked. Is it 40 percent——

Mr. BAREFOOT. Your loss, you start with 100 percent. That is your loss. Whatever your loss is is 100.

Mr. MARTINEZ. Well, OK. Then it is different than what we just discussed. You are saying that 40 percent is 40 percent of whatever the loss is.

Mr. BAREFOOT. Whatever the loss is.

Mr. MARTINEZ. All right. So in there is figured 60 percent for some other reason, other than employee theft?

Mr. BAREFOOT. Several other reasons go into that, yes.

Mr. MARTINEZ. OK. Then let us pursue that just a second. And let me time myself because I will go over, I will violate my own rules here.

In that instance, then, how can you measure accurately if all you are doing is at the end of the year measuring the loss that you have and then determining that 40 percent of it is inventory loss. It might be that a percentage of that is shoplifting. Who determines that figure?

Mr. BAREFOOT. The figure, Mr. Chairman, I would have to say that I am sure that the figure is not precise. It is an estimate that has been used for a number of years. Those people, those of us who have had any experience in the retail business know that a great deal of your shortage is caused by errors, human errors. The remainder is broken down between shoplifting and employee theft.

Now, the general rule of thumb that most people in the retail industry give is that if you take out the errors, the mistakes that were made that create the shortage, what you have left is theft shortage. And of that, about 60 percent of that would be employee theft versus about 40 percent shoplifting. And I think any retail expert, having nothing to do with the polygraph, that you might bring in and question would tell you the same thing.

Mr. **Martinez**. Then answer me this: What is the greater loss, shoplifting or employee theft?

Mr. **Barefoot**. Employee theft as opposed to shoplifting.

Mr. **Martinez**. Mr. Lykken, would you agree with that?

Mr. **Lykken**. I don't have any good evidence one way or the other. My reading of this literature is that it is full of these claims that tend to be undocumented. And as a scientist, I am always concerned about how they got the figures, and who did the counting and what were their biases, and what sort of evidence did they have to count. I suspect that these are shots in the dark. And I suspect, and I think this is the most important point, that as you look across the retail industry you will find smaller amounts of shortage in those companies that have better management: That tie things down, lock things up, allow access to valuable merchandise only to those people that need to have access, and that have good employee relations, as has been pointed out before.

Certainly if I were in the business world or if I were running a Government security agency, instead of relying on the fallible technique of polygraphy, I would tend to rely on good management techniques, which I am sure would save the company or the agency a lot more money and a lot more embarrassment.

Mr. **Martinez**. Thank you. I have one last question, and I would like to ask this of both you and Mr. Saxe.

We heard two statistics. One, 40 percent of the people who are found to be liars are actually not so, which indicates that 60 percent of the time it is accurate.

Do we have any idea how many of those people who actually tested out positive fooled the machine and lied? Do we have any idea?

Mr. **Lykken**. My impression is that in the studies that I was referring to the people being tested were unsophisticated people who had not read Mr. Williams' book or my book and didn't know how to beat the polygraph. But the evidence seems to indicate that the people were taking these tests in the way that most Americans take these tests, without any preparation and with nothing but fear and trepidation in their heart. So I doubt that in terms of these particular researches there was any false negative testing of an appreciable degree.

Now there have been studies that corroborate the testimony previously given. That it is possible in a short time to teach college sophomores how to beat the polygraph test. Evidence coming out of a prominent polygraph program at the University of Utah showing that after a moderate amount of training innocent people who have been made guilty of a mock crime can learn to beat a professional skilled polygraph test 40–50 percent of the time. Forty-nine percent of the time, to be accurate.

Mr. **Martinez**. My time has expired. Go ahead, Mr. Saxe.

Mr. **Saxe**. Just very briefly. One of the problems here is that in the most frequent of polygraph tests in the employment context, which is for screening employees before they get a job and then random screening once they have a job, there are no studies. So that any of the data that David or myself or other people talk about, about the accuracy rate or the number of errors, even if it is substantial, it is just a guess, because we do not have what we call in research generalizable data, and so it is really unknown how many errors are being made.

Mr. Martinez. Thank you.

Mr. Williams.

Mr. Pat Williams. Thank you, Mr. Chairman. I want to thank each of the members of the panel for your good counsel here today.

Mr. Barefoot, whenever a Member of Congress introduces legislation, we always try to anticipate as best we can what rationale will be used by the opposition to counter the legislation. And usually that logic that will be used, and many times it is logic, which will be used by the opposition is predictable. But I must say you have come up with a unique counter to my bill that I hadn't thought of before, and that is that it helps prevent bankruptcy of American businesses and we particularly need that in this past 5 years.

I had thought that the bankruptcy of American business had to do with a half-baked notion called "trickle down" economics, but you tell me it is because some businesses don't use lie detectors. I question the logic, I must say. There are little less than half the States in which the businesses don't use lie detectors and their bankruptcy rates are no higher than those States where the businesses do use lie detectors.

Perhaps a good example is Harrah's Club operating in both Nevada and New Jersey. A representative of Harrah's Club contacted us. We said, "Do you use polygraphs?" And they said, "Well, we do in Nevada and we can't in New Jersey. It is against State law." We said, "Where are you making the most money?" They said, "Well, business is awfully good in New Jersey and it is kind of stable here in Nevada." We said, "What about your theft rate?" They said, "Well, we see no difference between the theft rate in New Jersey at Atlantic City, and the theft rate in Nevada at Las Vegas."

So let me ask you to expand a bit on both the theft rate and the bankruptcy notion.

Mr. Barefoot. Well, the bankruptcy notion has been well-publicized. The Small Business Administration and the Department of Commerce over a period of years has put out figures—I don't have any with me today—that a very significant percentage of bankruptcies were attributable to employee theft. That is a matter of record.

I didn't say in my testimony that the polygraph is a panacea for bankruptcies. I didn't indicate that at all. I simply said that a number of small companies probably will go bankrupt if they lose their ability to utilize polygraph. I have no doubt about that.

Mr. Pat Williams. In 1977, Senator Bayh, Senator Humphrey, Senators Anderson, Abourezk, Hart, Kennedy, Melcher, Percy, Mathias, and Gravel introduced a bill which would have made illegal the giving of lie detectors by both the Federal Government, with the exception of the CIA and the National Security Agency, as well as any business involved in commerce. And you testified, and at that time you said that it was a fact that three out of four employees who handle money or merchandise stole from their employers. I am wondering if your low opinion of American workers is shared by your colleagues in the polygraph industry; and if so, does that low opinion affect their subjective judgments when they are interpreting test results.

Mr. **Barefoot**. Well, in the first place I don't feel that I have a low opinion. I am simply stating the facts as we found them to be. I think most polygraph examiners would concur with what I said. That of people who handle merchandise and money or any product that has any value three out of four have at one time or another taken something that didn't belong to them. Now, that doesn't mean I have a low opinion of them. That is just the realities of the situation.

Mr. **Pat Williams**. Well, Mr. Chairman, let the record show that the lie detector industry in this country says that their test results show that three out of four of America's workers are thieves. The lie detector industry is wrong. The test results are wrong. The overwhelming majority of America's men and women in the work force are honest people, and only a gadget like a lie detector, with all of its opportunities for misjudging results, would come to a conclusion that three out of four workers in the American job market are thieves.

Mr. **Barefoot**. Mr. Chairman, I am going to object to that because I didn't say that. And if Mr. Williams had read my testimony in detail, he would realize that I never said that that was the result of test results. That is simply what people have told us, and that has nothing to do with the test results.

Mr. **Martinez**. Well, Mr. Barefoot, you just said it is hearsay. Because it is just hearsay, you have no fact to base it on. So that is even worse than what Mr. Williams has accused you of.

At any rate, the time has expired of Mr. Williams, and I thank you all for appearing before us and testifying for us. We appreciate it.

Oh, excuse me. We do have one more person. I forgot. I am sorry.

Mr. Henry, you have no questions of this panel? All right, thank you.

Thank you again.

Mr. **Martinez**. Our next panel is Mr.—this one I am going to have a difficult time with, but you correct me if I am wrong—Mr. Krahulec? How far off was I? Mr. Krahulec is vice president for Government and trade relations, National Association of Chain Drug Stores, and joining him will be William L. Cole, security consultant, Wells Fargo Armored Service, and Larry Sherwood, Sherwood Management Co., retail jeweler.

Welcome, gentlemen. We will start with Mr. Krahulec.

STATEMENTS OF JIM KRAHULEC, VICE PRESIDENT, GOVERNMENT AND TRADE RELATIONS, RITE AID CORP., REPRESENTING NATIONAL ASSOCIATION OF CHAIN DRUG STORES, INC., ACCOMPANIED BY TY KELLEY, VICE PRESIDENT, GOVERNMENT AFFAIRS, NATIONAL ASSOCIATION OF CHAIN DRUG STORES, INC.; WILLIAM L. COLE, SECURITY CONSULTANT, WELLS FARGO ARMORED SERVICE CORP., AND LARRY SHERWOOD, SHERWOOD MANAGEMENT CO., RETAIL JEWELER

Mr. **Krahulec**. Thank you, Mr. Chairman, and members of the subcommittee. My name is Jim Krahulec, and I am vice president, Government and trade relations for the Rite Aid Corp., which is headquartered in Harrisburg, PA.

Rite Aid Corp. currently operates over 1,250 retail pharmacies located in 20 States. Accompanying me is Mr. Ty Kelley, who is vice president, Government affairs for the National Association of Chain Drug Stores.

Our statement this morning reflects the views of NACDS and its 172 corporate members that operate in excess of 17,000 drugstores throughout the United States. NACDS asks that our complete, prepared statement be made part of the official record of these hearings, and we thank the chairman for allowing us the opportunity to testify on this important issue regarding the use of polygraph tests in the workplace.

The problem of employee theft in business, in retailing, and within our industry, we reluctantly admit, is substantial. Each year business in America loses $40 billion to employee theft. Retailing sustains some $10 billion in losses annually, and the corporate drugstores are experiencing approximately $480 million in losses due to employee pilferage. Total losses for our industry include shoplifting, bad checks, credit card fraud, and illegal discounts and credits, and these are estimated to be in excess of $800 million. So the extent of the problem is critical in light of the current profit margins that are less than 3 percent for NACDS members.

These losses, internal and external, are about the limit most of our companies can tolerate. While much is being done to deter employee pilferage in terms of upgraded security, tighter inventory controls and improved management policies within the chain drug industry, fighting internal losses is an ongoing effort. To this end, the NACDS membership has found the polygraph examination, coupled with other screening procedures, including written integrity testing, to be very important in identifying potential security risks, especially among those persons that will be working around areas where controlled substances are stored.

In particular, polygraphs have also proven to be extremely effective for investigations after a drug shortage has been discovered. In fact, the Drug Enforcement Administration encourages retail pharmacies to establish and maintain a comprehensive screening program for employees, including the use of polygraph examinations. At this point, we wish to submit for the record several DEA documents on employee screening and the use of polygraph examinations. I have three such documents.

Mr. MARTINEZ. With no objection, so ordered.

[The documents follow:]

U.S. DEPARTMENT OF JUSTICE,
DRUG ENFORCEMENT ADMINISTRATION,
Washington, DC, July 19, 1985.

Mr. TY KELLY,
Vice President for Government Affairs, National Association of Chain Drug Stores, Alexandria, VA.

DEAR MR. KELLY: Per your request the following is provided regarding DEA statistics relative to employee drug thefts and previously issued policy regarding the use of polygraph for screening of applicants or employees.

First, regarding employee drug thefts, as relayed to you previously, comprehensive statistics are not available, but the following information should be useful to you:

For the period from July 1982 thru July 1983, total thefts reported to DEA were 6721.593, or 9% were reported as "employee thefts." For nine months during this period, a total of 582,893 dosage units (out of a total 13,614,334 dosage units) were reported as employee thefts, or 4% of the total units reported stolen for nine months.

For the fifteen month period of January 1984 through March 1985, a total of 8,861 drug thefts were reported to DEA, of which 1,376 thefts (16%) were reported as "employee theft." Statistics regarding total dosage units stolen during this period are not available.

Secondly, DEA previously commented on the use of polygraph examination in the screening of applicants or employees of registrants who will have routine access to controlled substances. DEA regulations concerning employee screening procedures are covered in Title 21, Code of Federal Regulations, Part 1301.90–1301.93.

It has been DEA's experience that extreme care is necessary on the part of drug firms, both in hiring and monitoring employees who have routine access to controlled substances. These drugs command an illicit price which is many times their legitimate value, thereby, creating an attractive temptation.

The polygraph examination, utilized as one aspect of an employer's comprehensive employee screening, monitoring and investigatory programs, for employees with routine access to controlled substances has proven to be an effective means of determining criminal background, history of drug use, and knowledge of or participation in the diversion of controlled substances. Information obtained as a result of the polygraph examination should be considered as but one part of an overall evaluation of the person's qualifications or continued employment.

DEA supports the use of the polygraph examination for pre-employment screening and as a subsequent investigatory tool in appropriate cases, provided that it is permitted by state and local laws. Those drug firms which utilize these procedures as part of their comprehensive program to minimize diversion are to be commended.

I hope this information will be useful to you.

Sincerely,

RONALD W. BUZZEO,
Deputy Administrator,
Office of Diversion Control.

U.S. Department of Justice
Drug Enforcement Administration

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Registrant FACTS

Controlled Substance Diversion from U.S. Hospitals

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Introduction

Through the years there have been many changes in the structure and content of the laws dealing with controlled substances. In 1970 laws were enacted in response to the sophisticated tactics by which substances with a high abuse potential were being distributed by unlawful suppliers. Despite the more comprehensive Controlled Substance Act of 1970, strict law enforcement, more stringent and innovative drug control systems, and public education, the illegal sale, use, and abuse of controlled substances continues to plague our society.

In 1981 we provided our initial estimate of the diversion of controlled substances from hospitals by health care professionals and hospital personnel and we warned that a serious problem may exist (Hoover, 1981). Further evidence substantiates our initial findings that health care professionals (including physicians, pharmacists, and nurses) are implicated in the diversion of substantial amounts of a variety of controlled substances from hospitals (McCormick, 1983).

In 1983, the Drug Enforcement Administration (DEA) testified before the Crime Subcommittee of the Judiciary Committee of the U.S. House of Representatives that diversion of controlled substances is more pronounced at the retail level rather than the wholesaler or manufacturer's level (DEA, 1983). The DEA indicated that about 2% or 13,000 practicing physicians and pharmacists are involved in some form of illicit practice resulting in diversion of controlled substances. Indiscriminate prescribing, dispensing of controlled substances without prescription orders, and dispensing of forged prescription orders were leading forms of illicit practice noted in the DEA's testimony. Research for this paper indicates that the internal diversion of controlled substances from hospitals may be a more serious issue than previously believed. Consequently, it is of primary concern that additional effort be made to curtail the diversion of controlled substances in hospitals.

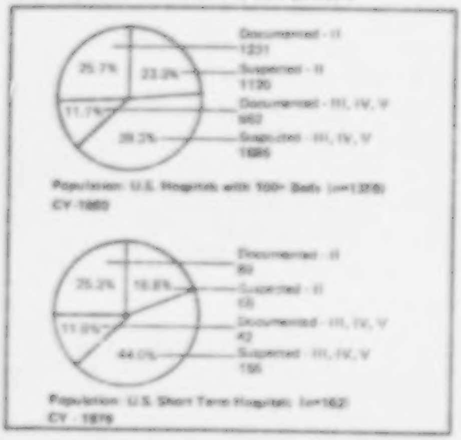
Two Independent Nationwide Controlled Substance Surveys of U.S. Hospitals

In 1979, a nationwide pilot survey was conducted to determine, among other things, the specific drug products and personnel involved in controlled substance diversion from hospitals. Subsequently, a more comprehensive follow-up study was conducted in 1980. The population surveyed in 1979 included a small systematic random sample of 285 U.S. short-term hospitals, while the 1980 study surveyed 3,466 hospitals or virtually all U.S. hospitals with 100 or more beds. There were 162 (57%) usable responses to the 1979 survey, while 1,359 (39%) hospitals provided usable responses for the 1980 study.

The Magnitude of Controlled Substance Diversion in U.S. Hospitals

Sixty-four percent or almost two-thirds of responding U.S. hospitals in both surveys reported at least one documented or suspected case of controlled substance diversion during the past year. Based upon 1979 data, it was projected that almost one-half million dosage units of controlled substances are diverted from all short-term U.S. hospitals (Hoover, 1981). The 1980 data, which revealed that 160,861 dosage units were "reported" diverted from 1,359 (39%) U.S. hospitals with 100 or more beds, support the magnitude of this problem. These data suggests that more than 400,000 (160,861 divided by .39) dosage units per year are estimated to be diverted from all U.S. hospitals with 100 or more beds. It should be noted that hospitals with less than 100 beds account for almost one-half of U.S. hospitals while those with 100 or more beds comprise the slight majority or just over one-half of all U.S. hospitals (AHA, 1981). Although smaller hospitals report less diversion, an additional 50-100,000 dosage units may disappear from over 3,000 U.S. hospitals with less than 100 beds, bringing the grand total to one-half million dosage units per year or more. The drug

Figure 1
Hospital Drug Thefts
Suspected/Documented Cases by CSA Schedule



products reported stolen in these two surveys were predominately diverted by health care professionals, particularly nurses employed by their respective hospitals.

Documented Versus Suspected Incidents

Of the drug diversion incidents reported in these two studies, 37 to 38 percent were documented and 62 to 63 percent were suspected (Figure 1). Slightly less than half of the incidents involved Schedule II drug products.

Over one-half of the Schedule II drug diversion incidents were documented but in contrast less than one-fourth of the diversion incidents of Schedule III, IV, and V substances were documented. This probably is a result of the increased documentation and accountability required by law for Schedule II substances. Figure 1 shows the striking similarity of the results of the 1979 and 1980 studies.

The Top Ten Drugs Diverted from U.S. Hospitals

The top ten drugs diverted from respondent hospitals in both surveys (1979 and 1980) accounted for over three-fourths of all controlled substance diversion incidents and dosage unit amounts. Figure 2 and 3 provide the results of the 1980 study.

Meperidine and diazepam are the drug products most frequently diverted from U.S. hospitals. Meperidine accounted for over 45% of all Schedule II diversion incidents, while diazepam diversions constituted nearly 40% of the Schedule III, IV, and V diversion incidents in 1980 (Figure 4).

In addition to diazepam, other benzodiazepines such as flurazepam, chlordiazepoxide, chlorazepate, and oxazepam resulted in an additional 17% of drugs commonly diverted from hospitals in 1980. Therefore, meperidine and the benzodiazepines were involved in about one-half of all incidents of controlled substance diversion from hospitals in 1980.

Figure 2
Top Ten Hospital Drug Thefts
CY 1980 (n=1359)

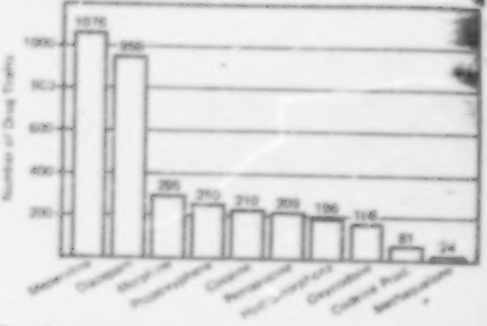


Figure 3
Top Ten Hospital Stolen Dosage Units
CY 1980 (n=1350)

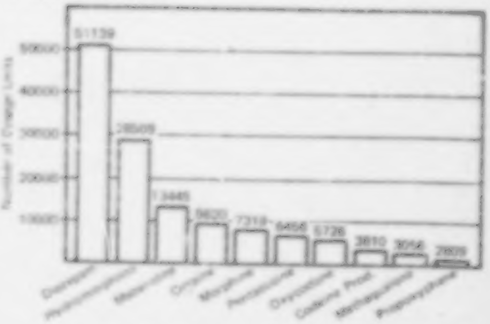


Figure 5 provides information on the amounts of the drug products diverted from the hospitals responding to the 1980 survey. You should note that diazepam, which accounted for almost 40% of Schedule III, IV, and V diversion incidents, also accounted for over 60% of the diverted dosage units within these schedules. While meperidine ranked well above other Schedule II substances in terms of diversion incidents, it accounted for less than 20% of the dosage units of Schedule II drug products diverted from hospitals. Hydromorphone ranked well above meperidine in regard to stolen dosage units in the 1980 study, and was second to meperidine in the 1979 study accounting for 22% of the dosage units compared to 26% for meperidine during that year.

Personnel Involved in Controlled Substance Diversion

In both 1979 and 1980, registered nurses (RNs) were involved in almost 70% of all reported incidents of controlled substance diversion from hospitals. Figure 6 displays diversion incident and dosage unit data for 1980 by diverter. Pharmacists and pharmacy technicians combined were only responsible for 13% and 8% of the reported incidents in 1979 and 1980 respectively. Physicians were responsible for approximately 3% of reported

Figure 4

Hospital Thefts for All Controlled Substances
CY 1980 (n=1359)

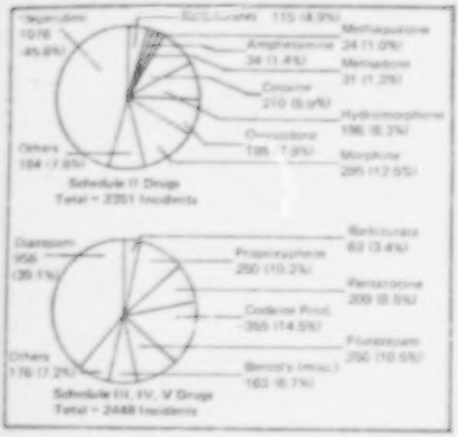


Figure 5

Hospital Stolen Dosage Units for All Controlled Substances
CY 1980 (n=1359)

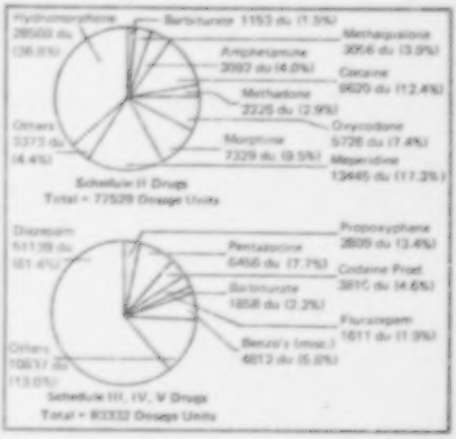
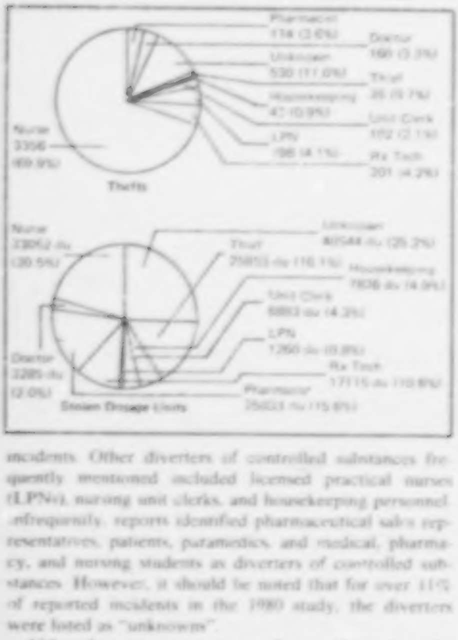


Figure 6

Controlled Substance Diversion – Hospital Personnel
Drug Thefts and Stolen Dosage Units, CY 1980 (n=1359)



incidents. Other diverters of controlled substances frequently mentioned included licensed practical nurses (LPNs), nursing unit clerks, and housekeeping personnel. Infrequently, reports identified pharmaceutical sales representatives, patients, paramedics, and medical, pharmacy, and nursing students as diverters of controlled substances. However, it should be noted that for over 11% of reported incidents in the 1980 study, the diverters were listed as "unknowns".

Although nurses were most often implicated in the incidence of diversion, the total number of dosage units stolen by pharmacists and pharmacy technicians exceeded those taken by nurses. In both 1979 and 1980, pharmacists and pharmacy technicians stole more total dosage units than all registered nurses and LPNs. The 1980 study results (Figure 6) indicate that hospital pharmacists and pharmacy technicians diverted over 42,000 dosage units of controlled substances, while over 34,000 dosage units were diverted by hospital nurses (RNs and LPNs). In the 1980 survey pharmacists and pharmacy technicians diverted an average of 144 and 85 dosage units per incident respectively, while nurses diverted an average of 10 dosage units per incident. This may be related to the larger quantities available to pharmacists and pharmacy technicians in the pharmacy and the more limited supply available to nurses on nursing units.

Hospital Nurse Profile

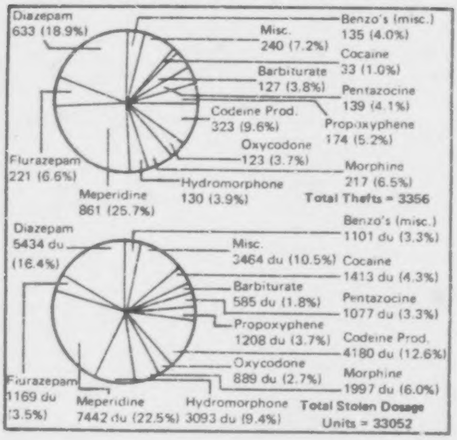
The most frequent drugs diverted by nurses in 1980 were meperidine (25.7%), diazepam (18.9%), codeine products (9.6%), flurazepam (6.6%), and morphine (5.5%). These four individual drugs and the codeine-containing products accounted for over two-thirds of all controlled substances diverted by hospital nurses (Figure 7).

The opiate drugs (meperidine, morphine, dilaudid, methadone, oxycodone, codeine, etc.) were diverted most often resulting in approximately three-fourths of all Schedule II diversion incidents. In 1980, there were over 1,000 separate incident reports of meperidine diversion from 1,359 U.S. hospitals. Of these, 1,076 incident reports, over 80% (861) involved registered nurses (RNs) and an additional 5% (53) involved licensed practical nurses (LPNs).

Several possible reasons for the more frequent incidence of opiate diversion, particularly meperidine, by hospital nurses may include the following:

1) The more frequent prescribing of meperidine (IMS, 1983) than other opiates (morphine, hydromorphone, etc.) increases the relative availability of this particular drug, thereby increasing its potential and actual diversion by hospital nurses.

Figure 7
Hospital Nurse Profile -- RN Only
Drug Thefts and Stolen Dosage Units, CY 1980 (n=1359)



2) Meperidine—a synthetic opiate—has a historical marketing history of being promoted as a less addicting opiate narcotic analgesic than the natural product morphine.

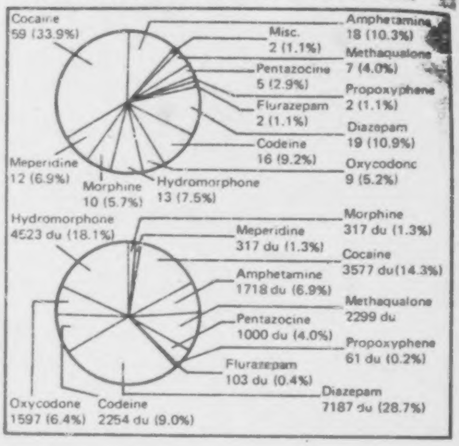
3) There is also some anecdotal information that suggests meperidine causes less pupil constriction than morphine. This would make the on-the-job abuse of meperidine less obvious to co-workers.

The next most frequent type of drug diverted by nurses were the benzodiazepines, particularly diazepam and flurazepam. In 1980, diazepam was the most frequent drug diverted by nurses of all Schedule III, IV, or V drug products, while flurazepam ranked second. Diazepam accounted for almost 19% of all nurse incidents with flurazepam and other miscellaneous benzodiazepines accounting for almost 6.6% and 4% of the incidents respectively (Figure 7). Other drugs commonly diverted by nurses included propoxyphene products (5%), pentazocine (4%), barbiturates (3%), and cocaine (1%). Therefore, it is evident that only a few select drugs are diverted by nurses. This suggests that these drugs may require particular attention, monitoring, and accountability in the maintenance procedures of any controlled substance system in an effort to minimize a large portion of the total controlled substance diversion problem in hospitals.

Hospital Pharmacist Profile

Hospital pharmacists most frequently diverted the stimulant drugs including cocaine, amphetamines, and amphetamine-like drugs from hospitals (Figure 8). Both the 1979 and 1980 surveys reported that stimulant drugs such as cocaine and amphetamines were commonly diverted by hospital pharmacists and accounted for almost one-half of all controlled substance incidents involving pharmacists. Since hospital pharmacists have almost exclusive access to large amounts of cocaine and amphetamines, this may account for the increased diversion by pharmacists.

Figure 8
Hospital Pharmacist Profile
Drug Thefts and Stolen Dosage Units, CY 1980 (n=1359)



The opiate narcotics (morphine, meperidine, hydromorphone, oxycodone, and codeine products) were also frequently diverted by pharmacists. Opiates were involved in over one-third of all reported incidents by pharmacists in 1980 and over one-eighth of the 1979 incidents.

The benzodiazepines (diazepam, chlordiazepoxide, flurazepam, and chlorazepate) were also commonly diverted by pharmacists with the benzodiazepines involved in over 22% of incidents in 1979 and 12% in 1980. Other drugs less frequently diverted by pharmacists included methaqualone, pentazocine, and propoxyphene products, which combined, accounted for less than 10% of all reported incidents of diversion by pharmacists.

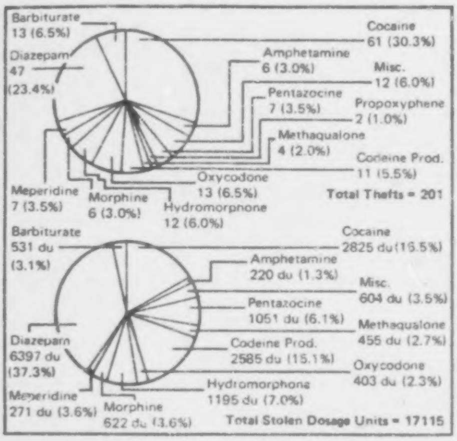
Hospital Pharmacy Technician Profile

Similar to the pattern of pharmacists, pharmacy technicians tended to divert drugs such as cocaine, the opiate narcotics, and the benzodiazepines. In the 1980 survey (Figure 9), pharmacy technicians' incident reports most frequently involved cocaine (30%), diazepam (23%), and the opiates (25%). Other drugs less frequently diverted by technicians were similar to those diverted by pharmacists and included methaqualone, pentazocine, and propoxyphene products. Barbiturates represented 6% of pharmacy technician diversion incidents.

Conclusion

The hospital personnel most frequently involved in controlled substance diversion were nurses (RNs and LPNs), pharmacists, and pharmacy technicians who accounted for over 85% of all controlled substance diversion reports from hospitals. While nurses most frequently diverted the opiates, they also diverted smaller amounts per incident as compared to pharmacists and pharmacy technicians who more commonly diverted larger quantities of stimulant drugs such as cocaine and amphet-

Figure 9
Hospital Pharmacy Technician Profile
Drug Thefts and Stolen Dosage Units, CY 1980 (n=1359)



amines. Not surprising, pharmacy personnel tended to divert larger amounts of dosage units per incident as compared to nurses. This is most likely related to the increased availability of large amounts of controlled substances, particularly cocaine and amphetamines to pharmacy personnel rather than to nurses. Similarly, nurses have relatively easy access to small amounts of opiate narcotics due to their widespread use in hospitals but limited supply on nursing units.

Only a few select drug products were involved in the majority of reported incidents of controlled substance diversion from hospitals. The two most notable examples of frequently diverted drugs are meperidine and diazepam which together accounted for almost one-half of all controlled substance diversion reports from hospitals. Other frequently diverted controlled substances included: (1) morphine, (2) cocaine, (3) hydromorphone, (4) oxycodone, (5) amphetamines, (6) pentazocine, (7) propoxyphene products, (8) codeine-containing products, and (9) miscellaneous benzodiazepines. Therefore, improved control methods designed to assure the accountability of a few commonly diverted drugs, particularly meperidine and diazepam, could decrease hospital diversion. ■

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Drug Abuse in the Workplace: Employee Screening Techniques

Presented by
Ronald W. Buzzeo
Deputy Director, Office of Diversion Control
Drug Enforcement Administration
before the 25th Annual Meeting of the
Institute of Nuclear Materials Management
on July 18, 1984

For many years the problem of drug abuse has been a matter of great concern to the Drug Enforcement Administration and its predecessors. Created through an act of Congress with a mandate to detect and deter the diversion of licit and illicit drugs, DEA is the primary Federal law enforcement agency with this responsibility. Although DEA has successfully controlled some aspects of the drug abuse problem, addiction continues to be America's major health problem. The deaths, disabilities and diseases stemming from alcohol, heroin, cocaine, marijuana, tranquilizers, sedatives, and barbiturates far exceed the mortality and morbidity rate of any other disease in the United States.

Each year, approximately 700,000 firms and individuals are registered by DEA to conduct activities involving substances controlled under the Controlled Substances Act of 1970. Of this number, only 3,500 firms account for over 20 billion dosage units of the various stimulants, depressants, tranquilizers, and sedatives produced in the United States each year. It is significant to note that of the 20 billion dosage units produced, millions are diverted each year from legitimate use to the illicit market as a result of the indiscriminate prescribing and dispensing habits of physicians and pharmacists and through outright thefts, forged prescriptions, pilferage, and backdoor diversion.

In addition, another 48 tons of illicit cocaine, 4.3 tons of heroin and 15,000 tons of marijuana are consumed each year by individuals who abuse drugs on a regular basis.

According to the 1982 National Household Survey of Drug Abuse prepared by the National Institute on Drug Abuse (NIDA), 21 million Americans used prescription drugs for nonmedical purposes during 1982. This survey also estimates that nearly 25 million Americans experimented with illicit drugs during the same period. (Of alarm is the fact that, of the users, better than 50 percent were youths and young adults between the ages of 12 and 25.)

The effects of drug abuse are also reflected in the statistics on drug-related emergency room visits and deaths reported to the Drug Abuse Warning Network (DAWN). DAWN statistics have continuously shown that the most heavily abused drugs are of legitimate origin. Of the top 20 drugs most frequently mentioned for 1980 through 1983, 15 were of a type found normally in the licit market. These 15 drugs, which include diazepam, codeine, flurazepam, and propoxyphene to mention a few, accounted for approximately 350,000 drug-related injuries and deaths from January 1980 to 1982; while illicit drugs, such as heroin, cocaine and LSD, accounted for another 150,000 drug-related deaths and injuries. This trend continues.

The fact is, that in terms of injuries and deaths, DAWN statistics clearly indicate that drugs of a legitimate origin are at least equivalent to those of an illicit nature.

The billions of dollars reaped by the unscrupulous purveyors of drug abuse can only be estimated. However, the detrimental effects of this problem are reflected everywhere we look. Drug abuse hits home every time a life is extinguished by an overdose. It hurts when otherwise excellent employees and careers are blemished by its effects. It also cuts into profits when employees abusing Valium®, Dilaudid®, or cocaine take excessive sick leave or produce inferior products. As long as the demand for illicit drugs remains in the marketplace and the potential for profits is so great, the drug dealer will find a way to get his product to the customer. Industry, as we well know, is a primary target and victim of this abuse.

In a recent report, NIDA stated that as many as six million workers in the United States abuse drugs on a regular basis. Other studies show that as many as three to five percent of the employees in any medium- to large-sized plant may be dependent on drugs as a way of life. Experts have also established 19 to 36 years of age as the median age range of employees under the influence of drugs. These are frightening statistics considering that many of these individuals go undetected until a fatal or tragic mistake is made. Their dependency and resulting negligence, apathy and lack of control contribute significantly to the 80 billion dollar price tag paid by the American economy as a result of lost productivity, absenteeism, poor quality control, injuries, ineffective supervision, destruction of property, and thefts. According to recent reports, compared with the norm for a working unit, the drug user:

—is at least three times as likely to be involved in an accident;

—has better than two times as many absences lasting eight days or longer;

—receives at least three times the average level of sick benefits;

—is at least five times as likely to file a worker's compensation claim;

—is at least seven times as likely to be the target of garnishment proceedings; and

—functions at about 65 percent of his or her work potential.

Sadly enough, employees who abuse drugs also affect the public health and safety. The cost of the pain and suffering inflicted on the American public by those who abuse drugs in the workplace cannot be measured in dollar amounts only, but also must be measured in lives.

What, then, can industry do to preclude or minimize the possibility of malicious acts which endanger the public health and safety? Employers have four options. They can choose to ignore the situation and hope that it will resolve itself; they can institute preventive safeguards to ensure that only those employees who are trustworthy and reliable are appointed to jobs that can impact or jeopardize the welfare of the American people; they can establish employee assistance programs; or, they can combine safeguards and assistance programs. Today, I will concentrate on preventive safeguards.

The consequences of undetected or undeterred drug abuse in the workplace can be especially tragic in the case of nuclear plants and facilities. DEA believes that management can best approach this problem by establishing and implementing standard employee screening procedures for employees who have unlimited and/or unrestricted access to potentially hazardous materials. Employers can provide a basis for a drug-free work environment by ensuring that their employees are fit for duty and are free from the illegal use of drugs.

The first step toward maintaining a drug-free workplace is to establish a clear, written policy concerning the use, possession or sale of drugs on company premises. An effective antidrug campaign will inform employees that the policy is aimed primarily at protecting employees, company property and the public from any danger resulting from the use of drugs. It is extremely important that the policy be equally and fairly applied to all employees regardless of their position within the company. Supervisors must be held accountable for ensuring that their employees are fit for duty and free from the effects of illegal drug use. Furthermore, supervisors must not assume the role of policeman or doctor but should refer employees for assistance.

Once an antidrug policy has been established, the firm is ready to take the second step toward a drug-free workplace. This involves the company's employee screening and hiring procedures. It is DEA's opinion that certain information is vital to a fair assessment of the likelihood that an employee will commit a drug security breach. The need to know this information is a matter of business necessity and is essential to overall security. In this regard, DEA believes that criminal convictions and unauthorized use of controlled substances are activities that are proper subjects for inquiry. The most effective way to evaluate whether an applicant has an impeccable background is to conduct a full-field background investigation. This investigation can be conducted by the firm's security department or by a private firm dedicated to this activity and should include inquiries into the individual's criminal, credit, educational and military history. Interviews with persons acquainted with the applicant or with previous employers will also assist the employer in obtaining an integrated behavioral profile of the individual.

In the case of nuclear plants as well as in the pharmaceutical industry, the criminal aspects of an applicant's background significantly impact the hiring decision. In making a final determination, three important factors must be considered by the employer. The first is involvement in criminal activities. Inquiries should be made to determine whether the individual has been convicted of any felony or series of lesser offenses indicating habitual criminal tendencies. If the answer to this question is yes, the circumstances surrounding the offense or offenses must be investigated and verified before making a final decision.

The second factor involves the applicant's use or dependency on drugs. The firm should keep in mind that the primary reason for conducting these inquiries is to maintain a drug-free work environment. Even though an individual who is a habitual user of illegal drugs may not be assigned to a sensitive position, if hired he could serve as a source of supply for other company employees.

The third factor involves the applicant's character—has he engaged in any activity that indicates that he may act in a manner contrary to the public health and safety or dangerous to life and property. If the answer to any of these inquiries is yes, serious consideration should be given to denying an applicant's request for employment.

The factors that enter into a background investigation (criminal record, credit, educational history, military history, character and reputation, and past employment) are very similar to the proposed regulations which have been published by The Nuclear Regulatory Commission (NRC). These will require development of an access authorization program for individuals seeking unescorted access to protected areas and vital islands for nuclear plants. As does NRC, DEA recommends that a period of five years be explored. DEA also recommends that, where permitted by state and local laws, a polygraph examination be used in the pre-employment situation or as a subsequent investigative tool.

Various techniques can be used to detect drug abuse in the workplace. The better known techniques include undercover investigations, drug-sniffing dogs, blood tests on those who suffer accidents on the job, and urine tests, which can show traces of marijuana as long as one month after use. However, the most inexpensive and reliable technique involves reports of drug abuse by fellow employees. Such reports are not only a necessary part of an overall employee security program, but also serve the public interest at large. Although fellow workers are likely to know who is using drugs, they may be afraid to convey the information to management, even though the abusers are endangering the safety and employment of their co-workers. It is DEA's position that an employee who has such knowledge has an obligation to report it. To encourage employees to comply, management should take all reasonable steps to protect the confidentiality of the information and the individual. Employers should also advise employees and supervisors that failure to notify officials of drug abuse in their respective areas may cause them to lose their jobs or to have their access to secure areas suspended.

But before this stage is reached every effort should be made to alert employees of the company's policy regarding drug possession or use. Signs spelling out that drug misuse is prohibited on company work locations and that individuals under the influence will be denied access should be posted in working areas, rest areas and entrance areas. If the firm has established the right to search vehicles and individuals without notice as a condition of entry into company property, such notification should be given at the gate or entrance. Contractors should be advised that company policy also applies to them and their employees when on site. It should also be made known that employees who use, possess, sell or divert controlled substances will become the subject of independent action regarding their continued employment.

Firms are encouraged to establish liaison and to maintain a good rapport with local law enforcement authorities. Since State laws vary, law enforcement officials are in the best position to determine what drugs should be confiscated, how they should be handled, and if an individual must be arrested. As they are also the experts on how to conduct drug investigations, they should be notified upon detection or suspicion of widespread drug abuse. No firm is given the right by law (Federal or State) to determine which drugs should be confiscated, reported or thrown in the wastebasket.

Drug users should be alerted to the fact that anyone in violation of Federal or State statutes regarding the use, possession or sale of controlled substances is subject to prosecution. Although everyone is not prosecuted, only the Federal or State prosecutor can determine who will be.

In closing, because of its sensitive nature, the nuclear industry is best served, as is the pharmaceutical industry, by instituting safeguards designed to prevent drug-dependent individuals from assuming positions that could have a detrimental effect on the health and safety of the American people. ■

EMPLOYEE SCREENING—NON-PRACTITIONERS

§ 1301.90 Employee screening procedures.

It is the position of DEA that the obtaining of certain information by non-practitioners is vital to fairly assess the likelihood of an employee committing a drug security breach. The need to know this information is a matter of business necessity, essential to overall controlled substances security. In this regard, it is believed that conviction of crimes and unauthorized use of controlled substances are activities that are proper subjects for inquiry. It is, therefore, assumed that the following questions will become a part of an employer's comprehensive employee screening program:

Question. Within the past five years, have you been convicted of a felony, or within the past two years, of any misdemeanor or are you presently formally charged with committing a criminal offense? (Do not include any traffic violations, juvenile offenses or military convictions, except by general court-martial.) If the answer is yes, furnish details of conviction, offense, location, date and sentence.

Question. In the past three years, have you ever knowingly used any narcotics, amphetamines or barbiturates, other than those prescribed to you by a physician? If the answer is yes, furnish details.

Advice. An authorization, in writing, that allows inquiries to be made of courts and law enforcement agencies for possible pending charges or convictions must be executed by a person who is allowed to work in an area where access to controlled substances clearly exists. A person must be advised that any false information or omission of information will jeopardize his or her position with respect to employment. The application for employment should inform a person that information furnished or recovered as a result of any inquiry will not necessarily preclude employment, but will be considered as part of an overall evaluation of the person's qualifications. The maintaining of fair employment practices, the protection of the person's right of privacy, and the assurance that the results of such inquiries will be treated by the employer in confidence will be explained to the employee.

[40 FR 17143, Apr. 17, 1975]

§ 1301.91 Employee responsibility to report drug diversion.

Reports of drug diversion by fellow employees is not only a necessary part of an overall employee security program but also serves the public interest at large. It is, therefore, the position of DEA that an employee who has knowledge of drug diversion from his employer by a fellow employee has an obligation to report such information to a responsible security official of the employer. The employer shall treat such information as confidential and shall take all reasonable steps to protect the confidentiality of the information and the identity of the employee furnishing information. A failure to report information of drug diversion will be considered in determining the feasibility of continuing to allow an employee to work in a drug security area. The employer shall inform all employees concerning this policy.

[40 FR 17143, Apr. 17, 1975]

§ 1301.92 Illicit activities by employees.

It is the position of DEA that employees who possess, sell, use or divert controlled substances will subject themselves not only to State or Federal prosecution for any illicit activity, but shall also immediately become the subject of independent action regarding their continued employment. The employer will assess the seriousness of the employee's violation, the position of responsibility held by the employee, past record of employment, etc., in determining whether to suspend, transfer, terminate or take other action against the employee.

[40 FR 17143, Apr. 17, 1975]

§ 1301.93 Sources of information for employee checks.

DEA recommends that inquiries concerning employees' criminal records be made as follows:

Local inquiries. Inquiries should be made by name, date and place of birth, and other identifying information, to local courts and law enforcement agencies for records of pending charges and convictions. Local practice may require such inquiries to be made in person, rather than by mail, and a copy of an authorization from the employee may be required by certain law enforcement agencies.

DEA inquiries. Inquiries supplying identifying information should also be furnished to DEA Regional Offices along with written consent from the concerned individual for a check of DEA files for records of convictions. The Regional check will result in a national check being made by the Regional Office.

[40 FR 17143, Apr. 17, 1975]

Mr. KRAHULEC. I also would like to point out to the committee the special problems that we in the retail drug business are facing. I heard earlier testimony concerning J.C. Penney and Sears, and so forth, and perhaps if we were in the business of selling sofas and refrigerators, we might have a different concern. But I would point out to you that the commodities in which we deal can easily be palmed in the hand of a typical worker. I have several examples of the types of schedule II drugs, which are the ones that are most highly abused, have a very high street value ranging anywhere from $3 to as much as $25 and $35 per dosage unit for some of the drugs which we carry as a routine part of our business, as a necessary part of our business. And yet, we are up against the diversion and held to very high standards by the DEA, by the various State agencies, to help guard against the diversion of these types of medications. And I think it is important that the committee recognize the high street value and the ease with which these drugs can be diverted out of our retail locations.

In light of current DEA requirements on our industry to combat drug diversion and in view of the widespread problem of employee theft affecting retailing and business, we believe that legislation banning the polygraph by firms engaged in or effecting interstate commerce would be unwise.

NACDS acknowledges that some problems have occurred in the administration of polygraph examinations regarding matters pertaining to an individual's right to privacy or that the tests may have been the sole determining factor relative to reaching a determination in hiring a person. Our industry does not condone these practices, and we respectfully submit to the subcommittee that these problems can be resolved through compromise legislation, such as H.R. 1792, which would govern and regulate the use of polygraph testing in the workplace. We firmly believe that this bill sponsored by Congressman Butler Derrick strikes a reasonable balance between the rights of the workers to protect their privacy while preserving the rights of businesses to protect their property from theft.

In summary, we strongly support H.R. 1792 and the development of additional legislation to establish stringent licensing requirements for polygraph examiners. NACDS remains adamantly opposed to any bill, including H.R. 1524 and H.R. 1924, that would ban polygraph examinations and other forms of written integrity tests.

Thank you.

Mr. MARTINEZ. Thank you, Mr. Krahulec.

[Prepared statement of Jim Krahulec follows:]

STATEMENT OF THE NATIONAL ASSOCIATION OF CHAIN DRUG STORES, INC.

FACT SHEET—SUMMARY OF STATEMENT

Employee theft

(1) Retailing is experiencing $10 billion in losses each year due to employee theft.

(2) Businesses are experiencing an estimated $40 billion a year due to employee theft.

(3) 10 percent to 15 percent of the retail price of a product is built in to cover internal losses.

(4) 83.5 percent of losses sustained in the Banking Industry are due to internal fraud.

Employee theft in drug stores—diversion of controlled substances

(1) $480 million in losses are suffered by retail corporate drug stores due to internal theft each year.

(2) Employee theft accounts for 60 percent of all losses incurred by the Chain Drug Industry.

(3) Drug Enforcement Administration reports that 500,000 to one million dosage units are stolen by employees from retail pharmacies, warehouses and trucks in transit each year.

(4) According to DEA, from January 1984 to March 1985, there were 8,861 drug thefts in the United States. Of this number, DEA reports that 1,376 or 167 were employee thefts.

(5) DEA requires all registrants to maintain a comprehensive employee screening program including the use of polygraph testing (CFR Title 21 Part 1301.90).

Accuracy of the polygraph

(1) Numerous studies show the polygraph to have a 75 percent to 96 percent rate of accuracy.

(2) A recent OTA report stated that of the one million polygraph test administered annually in the United States only 50,000 applicants failed the examinations. This means that 950,000 passed the test.

NACDS recommendations

(1) The Chain Drug Industry supports the legislation (H.R. 1792) and similar bills that would regulate polygraph examinations by firms engaged in or affecting interstate commerce.

(2) NACDS supports the development of Federal Legislation modeled after the Illinois Statute for the licensing of polygraph examiners.

(3) Corporate drug stores are opposed to any piece of legislation that would ban polygraph examinations and other forms of written integrity testing such as the Reid Report and the PSI.

INTRODUCTION

Mr. Chairman and members of the subcommittee, my name is Jim Krahulec and I am vice president, government & trade relations for the Rite Aid Corporation. Accompanying me is Ty Kelley, vice president—government affairs for the National Association of Chain Drug Stores, Inc. (NACDS).

Our organization represents the management of 172 corporations that operate more than 17,000 drug stores and pharmacy departments throughout the United States. The chain drug industry employs more than one million persons who work in corporate headquarters, regional offices, warehousing facilities and retail drug stores. Annual sales for chain drug stores total about $23 billion, and that amounts to about two-thirds of all retail drug stores sales. Corporate drug stores also account for one-third of all prescription drug sales in the United States.

Members of the National Association of Chain Drug Stores range in size from operations with only four stores to companies with more than 1,700 retail outlets. Thus, my testimony here today reflects the views of both small businesses and large corporate entities. My company, the Rite Aid Corporation, currently has more than 1,300 retail pharmacies operating in 20 States on behalf of NACDS, we appreciate this opportunity to discuss with the subcommittee pending legislation addressing the use of polygraph examinations and other forms of written integrity testing by firms engaged in or affecting interstate commerce. In our opinion, the issue before us, Mr. Chairman, is this: How can Congress best preserve an individual's right to privacy and the right of a worker to seek fair remedies while at the same time protecting business and the American public from the criminal element?

NACDS firmly believes the solution to this question lies in legislation such as H.R. 1792 sponsored by Rep. Butler Derrick (D–S.C.) that would establish a considerable number of needed standards and protections which would apply to the administration of all polygraph examinations. Additionally, we endorse the development of legislation that would bring long overdue reforms to the polygraph profession in terms of establishing high standards for examiners and strict licensing requirements. However, the chain drug industry is adamantly opposed to legislation such as H.R. 1524 and H.R. 1924 that would prohibit out corporate members from using polygraph examinations and other forms of written integrity tests.

We in American retailing, in general, and we in the corporate retail drug industry, in particular, find the polygraph examination to be a critical and necessary tool in our continuing battle against crimes committed by employees. Our members must be able to continue to use the polygraph examinations not only in the public interest but also in order to survive.

MAGNITUDE OF EMPLOYEE THEFT

Employee theft is a problem of staggering proportions, Mr. Chairman. It is estimated that employees are stealing more than $40 billion a year from American businesses. Companies may be losing as much as one-third of their profits to internal theft. And there is evidence that perhaps as many as 30 percent of all business failures in the United States are the direct result of employee theft.

The national institute of justice recently conducted a survey of employees in retail, manufacturing and service organizations in an attempt to better gauge the magnitude of employee theft. Of the employees surveyed by the institute, one-third admitted to stealing company property. Of course, the real percentage of employees who steal probably is much higher, assuming that not everyone who steals will admit to pilfering.

When workers steal, they're stealing not just from their employers but from all of us. Regretably Mr. Chairman, you are a victim. I am a victim. In fact, everyone in this committee room is a victim. It is currently estimated that 10 to 15 percent of the retail price of a product is built in to cover internal losses. That's a hefty tax on the American consumer, and it is especially an unfair and regressive tax on the poor and the elderly.

Retail drug stores seem to have greater exposure to internal theft than most businesses. There are more than 50,000 drug stores and pharmacies in the United States, located in urban areas, the suburbs and in small town communities. Drug stores stay open long hours to serve the public. And our stores carry the kind of product mix that is most likely to be stolen—prescription and proprietary drugs, cosmetics, tobacco, liquor, beer, wine, records and cassette tapes, small appliances, cameras, watches, and health and beauty aids. Because a majority of customer purchases are cash transactions, money is a problem along with "under rings" and "pass outs".

Corporate drug stores are constantly upgrading security throughout our industry, but in spite of this heavy investment our members are losing some $800 to $900 million a year to thieves, with employees accounting for more than 60 percent of the total. This, Mr. Chairman, is happening in an industry where the average profit margin is less than 3 percent.

EMPLOYEE THEFT—DRUG DIVERSION

But for our 172 corporate members, this issue of internal theft goes far beyond monetary concerns. That's because of the prescription drugs that we sell—potent drugs that physicians prescribe for millions of people to ease their pain and suffering, and in some cases, to sustain life itself. These same medications, though, when stolen and diverted from our stores and warehouses and put to improper use, can wreck lives and result in death.

The Drug Enforcement Administration (DEA) estimates that employees are stealing between 500,000 to over one million dosage units of dangerous drugs each year from pharmacies, warehouse facilities and trucks in transit. Although dosage unit figures are not available for the most recent reporting period, the DEA has compiled statistics that for the fifteen month period of January 1984 through March 1985, there were a total of 8,861 drug thefts in the United States. Of this number, DEA reports that 1,376 or 16 percent were employee thefts. What becomes of legitimately controlled drugs that are stolen? These potent substances end up in illicit channels and in the hands of young people adding to the Nation's drug abuse problem—and this is a situation that is of deep personal concern to our industry and hopefully to all of us in this room.

Throughout the years, NACDS and our corporate members have been working diligently with the appropriate Federal and State governmental agencies toward establishing adequate safeguards for prescriptions, especially controlled substances. The chain drug industry has spent huge sums of money to strengthen the security of areas where controlled substances are stored, but there still remains a potential for internal theft of these dangerous medications.

Based on informal surveys that NACDS has conducted, our members have advised the association that they continue to find polygraphs, criminal background checks, integrity testing and other investigative procedures to be invaluable in identifying potential security risks among persons who would be working in and around areas where narcotics are stored. In particular, polygraphs have proven to be very effective for investigations after a shortage of controlled substances has been discovered.

DRUG ENFORCEMENT ADMINISTRATION—PROPOLYGRAPH TESTING

The Drug Enforcement Administration addressed the question of polygraphs in a recent letter to NACDS, And I'd like to read into the record portions of that letter:

The letter reads: "The DEA is of the view that polygraph testing is one of the effective means to use during the initial hiring process of employees and in investigating matters concerning employees who have access to controlled substances. The polygraph examination is an effective means of determining if applicants have a criminal background or a history of drug use. It has proven its effectiveness in this area over the years. Registrants utilizing this procedure are to be commended for their efforts to reduce the diversion of controlled substances".

The DEA is absolutely right, Mr. Chairman. Polygraphs, together with other screening devices, not only help protect drug store chains from theft but also help stem the flow of controlled substances from our warehousing facilities and retail pharmacies into illegal channels.

POLYGRAPH USE WITHIN THE CHAIN DRUG INDUSTRY

Polygraph tests are used extensively and effectively throughout the chain drug industry. NACDS surveyed its member companies and found that polygraphs were being used by at least 80 percent of the companies that responded to our questionnaire, where permissible by State law. Further, we learned that of those companies using polygraphs, more than 90 percent consider the continued use of polygraphs to be essential and that a majority has experienced a decline in internal theft after beginning to use the polygraph. One drug chain recently wrote that "as a small businessman, I do a good job of interviewing and checking references. I think our other security measures are excellent. However, I cannot run a solvent company without the polygraph and pen-and-pencil tests unless I go to the expensive alternative of a full-blown security department." Other corporations report that with high turn-over rates in retailing constant screening is necessary and the polygraph coupled with a written test is a cost-effective system in this on-going process of hiring people.

CONSEQUENCES IF POLYGRAPHS ARE BANNED

The National Association of Chain Drug Stores believes that prohibiting the use of polygraphs by businesses would be very unwise in light of the consequences that will invariably result. Banning polygraphs would definitely invite more employee theft, something that we cannot afford. The Justice Department, in fact, has concluded in a study that up to 80 percent of the Nation's employees "will become involved in employee theft when no active preventive security measures are employed."

Outlawing polygraphers would result in higher costs to the consumer. Retail drug stores would have no choice but to increase product prices to cover additional losses attributable to employee pilfering that would certainly follow a ban on this investigative device. Banning polygraphers would lead to more drug abuse and human suffering. Without the polygraph, we see corporate drug stores and warehouses as becoming very vulnerable to internal diversion. Can we expect tax credit legislation from the Congress to cover the cost of installing additional surveillance and security equipment in our pharmacies to combat the expected increase in drug thefts by employees?

NACDS also believes that a prohibition on polygraphs would greatly undermine the Federal Government's aggressive campaign against illicit drug trafficking and drug abuse—a campaign that is led by none other than the First Lady, Nancy Reagan. The outlay by the Federal Government to fight drug dealing and related crimes exceeds $1.7 billion a year.

SOLUTION—COMPROMISE LEGISLATION

It is important that business, in general, and the chain drug industry, in particular, be allowed to continue to use polygraph examinations to protect the American public from the criminal element. But it is important, too, that industry and government work together to preserve the individual's right to privacy and fairness.

The National Association of Chain Drug Stores favors legislation that would establish certain standards and protections in the administration of polygraph examinations.

We support legislation that would prohibit polygraph examiners from inquiring into an individual's religious beliefs, racial background, political or labor affiliations or sexual preferences. We think it's wrong for individuals to be asked questions that are not relevant to the job or to the work environment.

We support legislation that would severely limit the number of people who can see the results of a polygraph test. We think that test results should be disclosed only to the individual tested, to those few company officials who need to review the results, to a Federal agency conducting an investigation or for proceedings relating to a labor dispute.

We support legislation that would require a polygraph examiner to provide the applicant before the test a list of questions that are to be asked. We support legislation that would allow polygraph examinations to be administered only to those individuals giving written consent.

We support legislation that would establish certain standards for training and certifying polygraph examiners. By the way, member companies of NACDS responding to a survey reported to all of their polygraph examiners are either licensed or certified. To this end, NACDS urges adoption of strict licensing standards for polygraph examiners fashioned after the statute in Illinois.

We at NACDS are sensitive to the concern that a polygraph test not jeopardize an individual's constitutional protection against self-incrimination. We believe there needs to be a balance maintained here to preserve the rights of both the employee and the employer. The employer should have available numerous means, including polygraph tests, to protect his business and the public. The employee also should have available the means to protect himself from being unjustly accused of a crime. A polygraph can also help to ascertain an employee's innocence.

We further want to make clear that we believe the polygraph examination should never be the sole source for pre-employment screening or for an internal investigation. Employers should use other investigative procedures in conjunction with polygraph tests in reaching a determination in a given case.

CONCLUSION

In summary, Mr. Chairman, the National Association of Chain Drug Stores believes that the Congress prohibits the use of polygraph examinations by business, America will be plagued by an increase in employee theft and drug abuse. The cost of our Nation would be tremendous—in both human and economic terms.

We hope that instead the Congress will acknowledge the critical role of polygraph testing in protecting the American people from the criminal element. And we hope that the Congress will enact legislation that regulates polygraph testing and guarantees the individual's right to privacy and fairness.

Thank you again, Mr. Chairman, for this opportunity to appear before you and the subcommittee. We at NACDS look forward to continuing to work with you and the subcommittee and other Members of the Congress on this important issue.

Mr. Martinez. Our next witness is Mr. Cole.

Mr. Cole, would you like to begin?

Mr. Cole. Thank you, Mr. Chairman, and members of the subcommittee. My name is William L. Cole. I represent Wells Fargo Armored Service, Wells Fargo Guard Service, and Burns International Security Services, all of which are wholly owned subsidiaries of Borg-Warner Corp.

For over 36 years, I have been engaged in the management and administration of private security service firms. The companies here which I represent today operate throughout the continental United States and Puerto Rico. They employ some 39,000 people, and are engaged in the transportation and handling of moneys and valuables, as well as contract guard services, for Government, banking, and the general business community.

We point out in our prepared statement that as custodians of our customers' moneys and protector of their interests we have an obligation to do everything in our power to ensure the trust placed in us is not abused. It is, therefore, imperative that every measure possible be taken in an attempt to recruit and hire employees whose honesty and integrity is unquestioned.

Wells Fargo Armored Service will handle up to $1 billion daily through transportation and related services. Burns International protects, among other industries, 25 nuclear facilities throughout the Nation. Wells Fargo Guard Service, in addition to others, provides security to all the U.S. Government's strategic petroleum reserve sites. Contractually, Burns is required to provide testing by polygraph for 95 percent of the guards at these nuclear sites. And the Department of Energy by contract requires all Wells Fargo guards at the petroleum reserve locations to pass a preemployment polygraph.

As you very well know, Congress recognizes situations where the proper use of polygraph is appropriate. In other words, the recently amended Department of Defense appropriations bill, to require polygraph examinations for individuals whose duties involve access to classified information. Such tests would be required prior to granting access to classified information and periodically thereafter at random.

Due to the nature of the business in which we are engaged, we, too, strongly believe in the proper use of the polygraph and are convinced that a polygraph examination is accurate more than 90 percent of the time where professionally trained examiners are utilized. Moreover, our experience has shown that the threat of polygraph exams definitely serves as a deterrent to potentially dishonest employees. It is also our firm belief that our company's current policies and practices fully protect potential and existing employees from any abuse by examiners.

Because we are convinced that the use of polygraph in certain segments of our business is mandatory for the protection of all parties concerned, we stand ready to support proposals to strengthen training and licensing requirements if there is a consensus that such is necessary. We do point out, however, that House bill 1524 would not apply to Federal, State, or city employees. Surely, if government has the right and recognizes the need for polygraph testing to protect themselves from dishonest employees, why should the security industry and others not have access to the same technology and protection.

We trust these rather short remarks, as well as our detailed prepared statement, will be made a part of the record, and we appreciate very much the opportunity of appearing here.

Thank you.

Mr. MARTINEZ. They will be, Mr. Cole.

[Prepared statement of William L. Cole follows:]

PREPARED STATEMENT OF WILLIAM L. COLE ON BEHALF OF BORG-WARNER CORP.

Mr. Chairman, Members of the Subcommittee: My name is William L. Cole. For over 30 years, I have been involved in the management and administration of the security service industry. For the past 6 years, I have been a security consultant to Wells Fargo Armored Service Corporation, Wells Fargo Guard Services, and Burns International Security Services, all wholly owned subsidiaries of the Borg-Warner Corporation.

The companies operate in 44 states and Puerto Rico. They employ over 39,000 people. In the armored business, we operate 1,200 armored trucks and vehicles servicing the Federal Reserve, the Bureau of Engraving, financial institutions, including money room services and automatic teller machines, and commercial/retail establishments. On any given day, Wells Fargo will handle $1 billion through transportation, inventory and storage services.

As custodians of a customer's money and protector of their interests, we have an obligation to do everything in our power to insure that the trust placed in us is not abused. More than 65 percent of total losses in the armored care industry are the result of internal theft. Thus, it is imperative that every measure possible be taken in an attempt to recruit and hire employees whose honesty and integrity is unquestioned.

Our Burns International Security Services Division and Wells Fargo Guard Division are actually required by their customers, in many cases, to perform pre-employment polygraph screening. Burns International, for instance, is a major supplier of guard services to nuclear facilities. This group protects 25 nuclear facilities throughout the country, employing over 3,000 guards in the process.

Burns is contractually required to provide polygraph testing for over 95% of them. Likewise, the Wells Fargo Guard Division is a prime contractor to the Department of Energy. This group provides security to all the U.S. Government's Strategic Petroleum Reserve sites throughout the country. These guards are highly trained and must have secret clearance. As a contractual requirement imposed by the Department of Energy, all guards assigned to those sites must pass a pre-employment polygraph test.

Borg-Warner shares Congressman Williams' concern that individuals not be denied employment unfairly or have their privacy invaded. We are, however, convinced that a polygraph test is accurate more than 90 percent of the time in cases where trained examiners are able to reach a conclusion about a person's truthfulness. Moreover, we believe that the threat of polygraph testing serves as a deterrent to potentially dishonest employees.

For these reasons, corporate policy allows the use of polygraph examinations in applicant screening, periodic testing, and with reference to specific events. That policy includes rigorous controls, which go beyond state requirements in most instances. At no time does applicant screening involve any question regarding religion, attitude toward unions, political beliefs, sexual behavior, or other personal issues. The test is meant to confirm the accuracy and truthfulness of the applicant's stated background, employment history, and reason for seeking a position with the company. It is only one step in a process which includes interviews, verification of prior employment, and other checks which are necessary prior to offering an applicant a job.

Even where state investigation and approval are required for security guards, pre-employment testing is an efficient screening mechanism to help prevent individuals with criminal arrest records from getting on our payroll. In New York, for instance, all guards must be fingerprinted and complete an application which must then be approved and processed by the state. If this processing discloses a criminal arrest record, the state advises the employer to terminate the employee. The problem is that it takes more than four months to obtain state clearance. Meanwhile, we could have a convicted felon on our payroll, assigned to protect a customer's highly valued assets. In order to adequately protect our customers and insure against what might otherwise be a significant liability exposure, we feel it is crucial to have the ability to do pre-employment testing.

Once hired, many employees must agree to periodic testing as a condition of continued employment. It is used most commonly in situations where an employee is involved in handling a customer's funds in what we call "an open bag situation," namely a money room or consolidation service, automatic teller machine service, or maintenance of currency inventory for a financial institution. The objective is to insure honesty on the job by having all employees know that they may be subject to an unannounced random polygraph test at any time in the future.

Wells Fargo Armored uses specific polygraph tests only if authorized by a regional general manager and the director of security as part of the investigation of a loss of customer funds. In most cases, such an investigation is coordinated with local law enforcement personnel, the FBI, and/or the United States Secret Service. Again, the purpose of the specific polygraph test is to confirm information given by the employee when interviewed regarding the disappearance of funds. Employees are never terminated based on polygraph results alone. In fact, in some cases our employees favor the use of an examination to help establish their credibility.

Borg-Warner is extremely careful in its polygraph testing. We use only qualified, state certified polygraph examiners, preferably members of the American Polygraph Association with prior law enforcement experience. In 1984 we administered approximately 700 tests to applicants for jobs, 50 random tests, and at least 200 specific tests. We are confident that the nature of our business and the demands of our customers warrant such rigorous review of potential employees.

Now that I have described our rationale for using polygraph testing and our strict controls on its use, I would like to comment on a number of recent trends in criminal activity in our business which we believe stem from inside information. These illustrations provide good examples of the types of situations where polygraph examinations can be an effective tool in crime solving and crime prevention.

In 1983 there were multi-million dollar robberies from our West Hartford and Memphis terminals. The FBI solved our Memphis loss with the identification of an employee who was involved with her brother, a former New Orleans police officer. The West Hartford loss involved an employee who is presently being sought by the FBI as a "Top Ten" fugitive. The Puerto Rican based Matcheteros have taken credit for planting him in our Wells Fargo terminal in Connecticut and are believed to be in possession of the stolen money.

Connecticut law did not allow us to administer applicant polygraphs and, therefore, we were unable to identify a person whose intention was not to seek legitimate employment. Both of these cases point out the connection between employee involvement and major losses in our industry.

Law enforcement officials on several occasions have recovered documents which indicate that terrorists groups in the United States intend to fund their activities by robbing financial institutions and the armored industry. The FBI and the police department in Dade County, Florida currently have a joint task force investigating a Marielito gang operating in south Florida. This group which is suspected of the murder of a Wells Fargo employee on June 21, 1985, has plagued the armored industry in Dade County with at least seven successful attacks since 1982. It appears to have contacts inside the armored companies and plan to have additional members seek employment. Without the use of polygraphs to screen applicants, more such attacks will undoubtedly occur.

On April 29, 1985, a well planned professional assault on our New York terminal resulted in an $8 million loss. Subsequent investigation by federal authorities identified individuals with organized crime connections as those responsible for this major loss. We expect the investigation to show that the criminals involved had inside information.

The well publicized increase in use of cocaine and other drugs in our country is a problem for all employers. We are especially concerned that we identify cocaine users in order to protect the resources of our clients.

The large number of robberies lately has created a new problem for our industry—the disappearance of insurance coverage. At this time, only a few companies are still willing to provide coverage and then at much higher premiums and deductibles. In order to stay in business, we must pass such cost increases on to our customers, who in turn pass them on to the American public.

I believe I have demonstrated how, when properly administered, the polygraph examination can be a useful tool in detecting and preventing criminal activity in our special business. Congress has already recognized situations where the use of polygraph tests are appropriate. By an overwhelming vote, the House recently amended the DOD Appropriation bill to require polygraph examinations for individuals whose duties involve access to classified information.

Such tests would be required prior to granting access to classified information and periodically thereafter at random. As I stated earlier, we share Mr. William's concerns for potential abuses but I believe that for our purposes those abuses are adequately addressed in the guidelines established by Rep. Derrick's bill, H.R. 1792.

In conclusion, we believe that Borg-Warner's current practice fully protects potential employees from abuse by polygraph examiners. In addition, we stand ready to support proposals to strengthen training and licensing requirements if there is a consensus that such are necessary. I would, however, point out that H.R. 1524 would not apply "with respect to any individual who is employed by the United States government, a state government, a city, or any political subdivision of a state or city." If the United States government, states, and municipalities have the right to use polygraph testing to protect themselves from dishonest employees, why should the security industry as well as other employers not have access to the same technology and protection?

Mr. **Martinez**. Our next witness is Larry Sherwood.

Mr. **Sherwood**. Thank you, Mr. Chairman, and members of the subcommittee. I am Larry Sherwood, vice president and coowner of Sherwood Management Co. We operate 24 retail jewelry stores in the southern California area, most of them under the name of Daniel's Jewelers.

I am here today on behalf of Jewelers of America, which is a national trade organization made up of some 12,000 retail jewelers, of which we are one of the members, and the Manufacturing Jewelers and Silversmiths of America. That group consists of 2,400 jewelry manufacturers.

It is our position that a ban on the private sector use of polygraphs as proposed in H.R. 1524 and H.R. 1924 would have a devastating impact on the jewelry industry.

As a small businessman, I am really honored to have the opportunity to appear before the subcommittee to relate just how critical the use of polygraphs is to the jewelry industry. For background, I should state that our family business began in 1952 when my dad bought a jewelry store in Bell Gardens, CA. At that time and for many years thereafter, we functioned as a real "mom and pop" operation. Because of a lot of hard work and a lot of good service to our customers, we were able to experience a rate of growth that we really never even believed would exist. Unfortunately, it wasn't all positive. Accompanying the growth and expansion of our business was an alarming rise in inventory shortages. Upon review of our internal security procedures, in 1975, we implemented a new policy requesting that prospective and current employees submit to polygraph examinations.

Having had the experience of operating both with and without the use of polygraphs, I can say without equivocation that in our industry it is essential that jewelers have the opportunity to utilize polygraphs to ensure the integrity and stability of their employees. While recognizing that the polygraph is not infallible, it has been my experience and our experience and that of many other jewelers that it is the most accurate and efficient means of confirming information that is included on an employment application.

The potential for gaining useful background information by checking employment references has been substantially minimized in recent years because many employers fear that their oral or written comments to another employer concerning a past worker could lead to a lawsuit for defamation of character. In fact, because of increased litigation in this area, many employers today will verify dates of employment only. Consequently, the significance and value of the polygraph have been enhanced by the corresponding decline in the effectiveness of employment references. Also, using investigative organizations to gather information on a job applicant can be time consuming, expensive, and frequently result in the accumulation of prejudiced information. Through the use of polygraphs, we are able to obtain relevant employment information from specific job applicants.

Mr. Chairman, in view of the committee's deep concern for an individual's right to privacy, I would like to emphasize "relevant employment information." We have no interest in an individual's sexual preference, religious beliefs, or affiliation with labor organizations. These are all matters that we consider private and personal to the individual and, frankly, irrelevant in determining whether that person would make a good employee.

At this time I would like to relate, if I may, a few incidents that demonstrate how a polygraph test can help secure a job for an individual who otherwise would not have been hired, as well as instances which rebut a common misconception that the use of polygraphs suggests an adversarial employee-employer relationship.

About a year ago, a job applicant admitted during her first interview that she used an illicit drug on a rather regular basis. When an applicant makes such an admission in an interview, an employer's first inclination, quite frankly, is to steer away from any possible involvement with that person. However, by being able to polygraph this applicant, we determined that her drug use was confined to smoking marijuana with her husband at night. The polygraph revealed that she had not used drugs prior to or during work, and as a result she did not constitute a security risk. This person was hired and is still employed by us today.

A nearly identical incident occurred about a month ago. Obviously, we don't condone the taking of any illicit or illegal drugs, but I raise the incidents to show that we use the polygraphs, really, to help identify security risks and not to invade or make value judgments on an individual's private life.

In all candor, Mr. Chairman, I state that an overwhelming majority of our employees support the company's polygraph program. In demonstrating why, I would point to an instance in which one employee accused another of stealing thousands of dollars worth of merchandise from us. When we polygraphed the people in the store, the accused individual revealed no deception. The individual making the accusation, however, showed deception when polygraphed and later confessed to having stolen merchandise from us.

Similarly, the polygraph has proved instrumental in determining employee honesty when a worker was accused of theft by a customer. One specific example occurred just about a week and a half ago when a customer ordered a ring in which to set her diamonds in. A couple of weeks after and this is when the incident occurred, was a couple weeks after she had ordered the ring. She came to our store to see if the ring had arrived. When she was informed that it hadn't come in yet, she said to the employee, "Well, you still have my diamonds, of course?" The employee, at that point, didn't know what to say and swore that he had never gotten the customer's diamonds. At that point, the employee came to us and said, "Please give me a polygraph. I want to prove that I didn't have anything to do with this." The polygraph did, in fact, show that there was no deception. We were able to inform the customer of these results, and we blamed the incident on an inexplicable mix-up. The critical thing here is that we were able to preserve the reputation of both the salesperson and the company through the use of the polygraph.

You will note in the attachments to my testimony that there are scores of incident reports from our company as well as those from Jewelers of America and from two of the largest retail jewelry firms in the country, Zale out of Dallas and Gordon out of Houston. A quick review of these reports reveals two key factors: (1) whether or not a shortage situation is resolved and merchandise recovered, numerous employees who were in a position to be implicated in a theft and possibly fired were cleared of any involvement by use of a polygraph; and (2) many of the losses involved were of valuable, highly marketable merchandise in a value of $5,000 and up.

Much like Jim, I brought along a sample just to give the Committee an idea. In our business, this stone is an over-$5,000-at-retail diamond. It is a real problem because of the size and because of how easy it is to hide such an item. It doesn't take too many losses of this nature for a jeweler to face the unenviable choice of having to either clean house of existing employees or to consider the possibility of having to close his store if inventory losses get great enough. It is a case in which a worker can conceal a tiny, valuable item that makes the jewelry industry such a sensitive one.

Recently, following the discovery of an inventory shortage in several store locations in the Southern United States, one major jewelry chain polygraphed several individuals suspected of stealing. The results of those polygraphs led to discovery of an internal theft ring within the company. This case is now before a grand jury. I am not at liberty to say more than that seven people have confessed to their involvement in the ring in which $600,000 worth of merchandise has been recovered.

The use of polygraphs also has an indirect effect on insurance rates and a direct impact on insurance coverage. Because polygraphs have been shown to reduce losses and assist in recovery of stolen items, they have helped to hold down escalating insurance costs for many jewelry firms. In the jewelry industry there are basically two types of policies. A "block policy" is an all risk policy that covers losses except for employee theft. This is something where you get coverage to cover your inventory amount; and "employee fidelity policies," which covers losses attributed to employee theft. With respect to an employee fidelity bond claim, a jeweler needs to prove that the merchandise or money was, in fact, stolen by an employee. In the case of a block claim, the jeweler must also prove that it was not employee related. In my experience, I have found the polygraph to be critical in both cases.

As I mentioned with respect to insurance coverage, polygraphs have been shown to limit losses caused by internal theft. The Zale Corp. reports that as a result of the use and availability of polygraphs, the company was able to recover money and merchandise during the past 4 years valued at just under $2 million.

We, in the jewelry industry, fully support legislative efforts that would establish Federal standards designed to eliminate potential abuses of polygraphs. To this end, we recommend an approach embodied in legislation, H.R. 1792, offered by Congressman Butler Derrick. Along these lines, I have also included as an attachment to my testimony a recently passed California State law that regulates all persons who conduct polygraph examinations.

Thank you, again, Mr. Chairman, for your time, and I would be happy to answer whatever questions.

[Prepared statement of Larry Sherwood follows:]

TESTIMONY OF LARRY SHERWOOD, SHERWOOD MANAGEMENT CORP., ON BEHALF OF JEWELERS OF AMERICA AND MANUFACTURING JEWELERS & SILVERSMITHS OF AMERICA

Mr. Chairman, members of the Subcommittee and staff, I am Larry Sherwood, Vice President and co-owner of Sherwood Management Company, Bell Gardens, California which operates 24 jewelry stores in the Southern California area, most of them under the trade name of Daniel's Jewelers.

I am here today in behalf of the Jewelers of America, New York, N.Y., a national trade organization comprised of 12,000 retail jewelers, of which my firm is a member, and the Manufacturing Jewelers and Silversmiths of America, Providence, Rhode Island consisting of 2,400 jewelry manufacturers. It is our position that a ban on the private sector use of polygraphs as proposed in H.R. 1524 and H.R. 1924 would have a devastating impact on the jewelry industry.

As a small businessman, I am honored to have the opportunity to appear before this Subcommittee to relate how critical the use of polygraphs is to the jewelry industry. For background, I should state that our family business began in 1952 when my father purchased a single jewelry store. At that time and for several years after, Daniel's Jewelers functioned as a true "mom and pop" operation. As a result of hard work and faithful service to our customers, we began to experience a rate of growth that far exceeded our wildest dreams. It was, however, not all positive. Accompanying the growth and expansion of our business was an alarming rise in inventory shortages. Upon review of our internal security procedures in 1975, we implemented a new policy requesting that prospective and current employees submit to polygraph tests.

Having had the experience of operating with and without the use of polygraphs, I can say without equivocation that in our unique industry it is essential that jewelers have the opportunity to utilize polygraphs to help insure the integrity and stability of their employees. While recognizing that the polygraph is not infallible, it has been my experience and that of many other jewelers that is is the most accurate and efficient means of confirming information included on an employment application.

The potential for gaining useful background information by checking employment references has been subtantially minimized in recent years because many employers fear that their oral or written comments to another employer concerning a past worker could lead to a lawsuit for defamation of character. In fact, because of increased litigation in this area, many employers today will verify dates of employment only. Consequently, the significance and value of the polygraph have been enhanced by the corresponding decline in the effectiveness of employment references. Also, using investigative organizations to gather information on a job applicant can be time consuming, expensive and frequently result in the accumulation of prejudiced information. Through the use of polygraphs, we are able to obtain relevant employment information from specific job applicants.

Mr. Chairman, in view of the Committee's deep concern for an individual's right to privacy, I would like to emphasize—relevant employment information. We have no interest in an individual's sexual preference, religious beliefs or affiliation with any labor organizations. These are all matters that we consider private and personal to the individual and frankly irrelevant in determining whether that person would make a good employee.

At this time, I would like to relate incidents that demonstrate how a polygraph test can help secure a job for an individual who otherwise would not have been hired, as well as instances which rebut a common misconception that the use of polygraphs suggests an adversarial employee-employer relationship.

About a year ago, a job applicant admitted during her first interview that she used an illicit drug on a rather regular basis. When an applicant makes such an admission in an interview, an employer's first inclination is to steer away from any possible involvement with that person. However, by being able to polygraph this applicant, we detemined that her drug use was confined to smoking marijuana with her husband. The polygraph revealed that she had not used drugs prior to or during work and as a result she did not constitute a security risk. This person was hired and is still with us today. A nearly identical incident occurred about one month ago. Obviously, we do not condone the taking of any illicit drug. I raise these incidents to show that we use polygraphs to help identify security risks and not to invade or make value judgments on an individual's private life.

In all candor, Mr. Chairman, I would state that an overwhelming majority of our employees support the company's polygraph policy. In demonstrating why, I would point to an instance in which one employee accused another worker of stealing thousands of dollars worth of merchandise from us. When we polygraphed the people in the store, the accused individual revealed no deception. The individual making the accusation, however, showed deception when polygraphed and later confessed having stolen merchandise from us.

Similarly, the polygraph has proven instrumental in determining employee honesty when a worker was accused of theft by a customer. One specific example occurred recently when a customer ordered a ring in which to set her diamonds. Two weeks after ordering the ring she came in to see if it had arrived. Informed that it had not, she replied "you still have my diamonds, of course." The employee involved swore that the woman had never given him the diamonds, and the worker requested that we give him a polygraph. The polygraph showed no deception and we were able to inform the customer of these results, blaming the incident on an inexplicable mixup. The critical thing here is that we were able to preserve the reputation of both the salesperson and company.

You will note in the attachment to my testimony that there are scores of "incident reports" from my company as well as those obtained by the Jewelers of America from two of the largest retail jewelry firms in this country, the Zale Corporation of Dallas, and Gordon Jewelry Corporation of Houston. A quick review of these reports reveals two key factors present: (1 whether or not a shortage situation is resolved and merchandise recovered, numerous employees who were in a position to be implicated in a theft and possibly fired were cleared of any involvement by use of a polygraph, and (2) many of the losses involved, highly marketable merchandise in the area of $5,000 and up. It does not take too many losses of this nature for a jeweler to face the unenviable choice of "cleaning house" of existing employees or closing a particular store. It is the ease in which a worker can conceal a tiny, valuable item that makes the jewelry industry such a sensitive one.

Recently, following the discovery of an inventory shortage in several store locations in the Southern United States, one major jewelry chain polygraphed several individuals suspected of stealing. The results of those polygraphs led to a discovery of an internal ring within the company. This case is now before a grand jury and I am not at liberty to say more than that seven people have confessed to their involvement in this ring in which $600,000 worth of merchandise has been recovered.

The use of polygraphs also has an indirect effect on insurance rates and a direct impact on insurance coverage. Because polygraphs have been shown to reduce losses and assist in recovery of stolen items, they have held down escalating insurance costs for many jewelry firms. In the jewelry industry there are basically two types of policies: (1) a "Block Policy" is an all risk policy that covers losses except for employee theft; (jewelers commonly obtain coverage under their block policy for an amount equal to their inventory value), and (2) "Employee Fidelity Policy" which covers losses attributed to employee theft. With respect to an employee fidelity bond claim, a jeweler needs to prove that the merchandise or money was stolen by an employee. In the case of a block claim, a jeweler must prove that the loss was not employee-related. In my experience, I have found that polygraph to be critical in both cases.

As I mentioned with respect to insurance coverage, polygraphs have been shown to limit losses caused by internal theft. The Zale Corporation reports that as a result of the use and availability of polygraphs, the company was able to recover money and merchandise during the past four years valued at just under $2 million.

We in the jewelry industry fully support legislative efforts that would establish federal standards designated to eliminate potential abuses of polygraphs. To this end, we recommend an approach embodied in legislation, H.R. 1792, offered by Rep. Butler Derrick. Along these lines, I have included as an attachment to my testimony a recently passed California state law that regulates all persons who conduct polygraph examinations.

Thank you, Mr. Chairman. I would be happy to answer any questions.

ATTACHMENTS

APPENDIX TO STATEMENT OF JEWELERS OF AMERICA, INC. AND MANUFACTURING JEWELERS & SILVERSMITHS OF AMERICA, A SUBMISSION OF THE ZALE CORP.

Zale Corporation entrusts to its employees millions of dollars of valuable and highly marketable merchandise. Because of the very nature of its business, the corporation has a duty to its stockholders and employees to assure that its inventory and people are protected against dishonesty. It is the policy of Zale Corporation to polygraph all of its employees who occupy sensitive positions to include: Chairman of the Board, Corporation President, Group President and other corporate officers, those experiencing a discrepancy in the purchase or contracting of goods and services, those having responsibility in the control or movement of inventory, those involved in the direct or indirect handling of cash or like financial incidents, store level personnel and other individuals who may be deemed necessary by senior management.

We feel that as a result of the availability and use of the polygraph, the Zale Corporation was able to recover money and merchandise during the past four years valued at just under $2 million.

Examples of use of specific polygraph tests in our business are as follows:

(1) In late November, 1984 one of our stores in Irving reported a mysterious loss of a high value diamond ring. A long-term employee who had last shown the ring was suspected of stealing the ring. A staff examiner ran a specific polygraph test on all of the employees and the primary suspect was cleared of the theft. However, further interviewing of an individual who did not clear this particular test resulted in admission of stealing not only this ring but another piece of jewelry and cash. Thus, the polygraph in this case not only cleared the suspected individual but identified the thief.

(2) In December, 1984, the district manager of our store in Houston called to advise that several payments made to a customer's account in cash was missing. Our staff examiner in Houston began a routine investigation and identified the manager of the store where the account was as the primary suspect. After further interviewing and testing, the manager confessed to taking two payments, as he needed the money to pay for his car. This information and the manager's written confession were provided to the police for prosecution.

(3) Within the past few months at our stores in the Dallas-Fort Worth Airport, cash shortages from three particular drawers were beginning to become a problem. We began an investigation that led to three specific polygraph tests. A person was found to be deceptive concerning the stealing of cash from the corporation, and subsequently admitted taking the monies from all three drawers. Thus, the polygraph assisted in catching the thief and clearing two other individuals from any involvement in the thefts.

(4) An employee of our Insurance and Advisory Replacement Services had worked in a store temporarily to assist customers in replacing their stolen merchandise. During her short tenure at this store, a diamond ring valued at over $15,000 was reported missing. Our investigation and the accusation made by other employees led us to believe she was the primary suspect. She was subsequently tested by one of our in-house examiners in Dallas and cleared her polygraph test relating to that theft. Several weeks later, another employee admitted to stealing that particular ring after being caught stealing another piece of merchandise.

As you can see, the polygraph is not only instrumental as an investigative tool in the identification of primary suspects but it also helps clear other individuals of suspicion from management and fellow employees. The incident reports cited above are just a few of hundreds of similar instances that have occurred within our company over the recent years.

GORDON JEWELRY CORP.,
Houston, TX, July 19, 1985.

Re: H.R. 1524—H.R. 1924 Employment Opportunity Subcommittee polygraph probation.

Rep. AUGUSTUS F. HAWKINS,
House of Representatives
Washington, DC.

DEAR REPRESENTATIVE HAWKINS. As a principal of the second largest publicly held retail Jewelry Corporation in the United States, I urge you to vote against these two bills and/or any amendment which would restrict the use of polygraph by the private sector.

Each member of the Employment Opportunity Subcommittee and each member of the Full Education and Labor Committee cannot help but be aware of the tremendous cost of white collar crime that is currently sapping tax-paying industry and business throughout this country. Utilizing schooled and licensed professionals, the polygraph has and will play a responsible role for those sensitive industries, both with pre-employment and subsequent audit interviews.

Our documented information over the past 15 years reflects that the polygraph, when used in connection with a pre-employment interview, is the most accurate and efficient method of confirming information contained within the employment application. Conventional methods of using investigative organizations to examine the background of applicants by interviewing neighbors, employers, associates, relatives, and searching records is time-consuming, very expensive and reflects prejudice information and bias opinions. Conversely, the polygraph interview focuses specifically on the applicant, as the information sought concerning experience, habits, intergrity, stability, tenure, and attitude, comes directly from the applicant him/herself.

The polygraph interview allows the employer to determine the applicant's qualification and acceptability in a matter of hours rather than days or weeks.

If every applicant for employment carefully read and understood the disclosure required by the Fair Credit Reporting Act concerning an employment investigative consumer report and knew that their neighbors, employers, creditors, relatives, and business acquaintances would be interviewed and public records perused in an effort to determine qualifications, credibility, and acceptability, along with the ensuing time lapse, most would unequivocally prefer the immediacy of polygraph.

We are a national company, operating in excess of 650 stores in 44 states and Puerto Rico (36 stores in California), which employs 7,000 regular plus 2,000 seasonal employees. To deny a sensitive industry such as ours, the use of a proven and effective employee assessment tool is ludicrous. Furthermore, in the absence of polygraph the increased cost for security protection from fidelity losses would be exceeded only by the folly of political expedience.

I urge you to take a firm position and vote against any bill or amendment that would restrict the use of polygraph by the private sector.

Yours very truly,

LARRY T. HAMPTON,
Senior Vice President.

APPENDIX TO STATEMENT OF JEWELERS OF AMERICA, INC. AND MANUFACTURING JEWELERS & SILVERSMITHS OF AMERICA—A SUBMISSION OF THE GORDON JEWELRY CORP.

The following is a compilation of over two dozen 'incident' reports revealing how the use of polygraphs resulted in the recovery of stolen merchandise and money, the identification of guilty parties and the clearing of innocent parties from suspicion. It should be noted that most of these cases occurred within the past twelve months and represent only a sampling of our files.

(1) Information indicated that an employee was involved in the internal theft of jewelry. The employee denied guilt and took a polygraph test which showed her deceptive. The employee then admitted in writing that she had stolen $40,000 in jewelry from her place of employment and had sold the jewelry through the help of an accomplice. The employee was placed under arrest by the police.

(2) Information from an informant who happened to be a sister-in-law of an employee indicated the employee was engaged in extensive jewelry theft from her employer.

During pre-polygraph test interview the employee admitted several thousands of dollars worth of jewelry taken and sold out of state. Later admissions to the police resulted in recovery of over $260,000.00 worth of company jewelry. An equal amount in out of state transactions was never recovered.

(3) Informant information indicated a company employee was involved in theft of jewelry and her husband was engaged in selling the stolen items.

Following polygraph tests which showed the employee deceptive, she made a written statement admitting her guilt and implicating her husband. A police search of the employee's residence revealed approximately $500.00 in stolen jewelry and $20,000.00 in cash which the husband admitted came from the sale of stolen company jewelry. The couple was arrested. Restitution payments were later made by the couple at court order.

(4) During preliminary investigation, a bookkeeper at one of the stores denied that any theft of store monies had occurred. Even when faced with several pieces of evidence, she denied her own guilt. During the pre-polygraph test interview, the bookkeeper admitted her guilt in writing.

Within a short period of five months, this trusted employee had stolen nearly $10,000.00 in cash from the store. The bookkeeper agreed to a schedule of restitution in which repayment was made.

(5) Following being found deceptive on his polygraph test, a store manager admitted theft of a ½ Ct diamond ring valued at $2,499.00, which he had swapped for another diamond.

After another polygraph test in which he was also found deceptive, the manager admitted additional thefts of both money and jewelry from the store he managed.

(6) Information indicated that merchandise was being stolen from the warehouse. Four temporary Christmas Season employees were polygraph tested along with other warehouse employees. The four were found deceptive on their polygraph tests, and when confronted with the results, admitted their guilt. They cooperated fully in return of cash and merchandise valued at $1,427.00 which they had stolen.

(7) A former employee claimed an expensive watch he had purchased had been stolen from him and planned for his insurance to pay the balance of his account.

Informants indicated the former employee was attempting fraud. The former employee took a polygraph test and was found deceptive.

Following the polygraph test, he admitted it was just a scheme to collect insurance, and agreed to immediately pay his outstanding balance of $1,082.00.

(8) Eight employees were polygraph tested and cleared of theft involving a $7,900.00 diamond ring.

(9) Four employees were polygraph tested and cleared in the loss of a $1,395.00 diamond ring from the store.

Two weeks later, one of the employees tested found the ring in the clothing she had worn at work. No deliberate theft was involved.

(10) Eight employees were polygraph tested and cleared in the loss of a $1,700 gold chain.

(11) Four employees polygraphed tested and cleared in theft involving the loss of two rings valued at $13,199.00.

(12) Six employees polygraph tested and cleared in the switch of a $799.00 diamond ring for a fake diamond ring.

(13) Ten employees were polygraph tested and cleared in the switch of a loose diamond valued at $3,100.00.

(14) Five employees cleared by polygraph examination of theft involving three Concord watches valued at $5,870.00.

(15) The store employee was cleared in a polygraph test of switching a customer's diamond solitaire valued at $5,499.00.

The customer refused to be polygraphed.

(16) Three employees were cleared by their polygraph test of theft in the mysterious loss of a diamond watch valued at $1,950.00.

(17) Eight store employees cleared by polygraph test in the switch of a diamond ring valued at $22,500.00 for a fake diamond.

(18) Four employees cleared by polygraph test in theft of jewelry from the display case valued at $9,794.00.

(19) The employee was cleared of stealing the $12,500 jade and diamond ring.

(20) Five employees cleared in the loss of a $275.00 diamond wedding band that was brought into the store by a customer for repair.

(21) Six employees cleared of theft of $11,437.00 in jewelry from display case.

(22) Four employees were polygraph tested and cleared in the loss of a $4,240.00 Rolex watch.

(23) Five employees were polygraph tested and cleared in the theft of $85,857.00 in jewelry merchandise from a display case.

(24) Four store employees cleared polygraph testing in the theft of a diamond ring valued at $1,799.00.

During polygraph testing, another employee admitted stealing the ring and selling it for $200.00.

(25) Polygraph testing cleared an employee of stealing or deliberately helping someone else steal two rings valued at $7,520.00 which were lost from the store.

(26) Five store employees cleared a polygraph test in the switch of a diamond solitaire valued at $3,499.00.

APPENDIX TO STATEMENT OF JEWELERS OF AMERICA, INC. AND MANUFACTURING JEWELERS & SILVERSMITHS OF AMERICA—A SUBMISSION OF SHERWOOD MANAGEMENT CO., INC.

The following examples demonstate how the use of polygraphs in jewelry stores owned by Sherwood Management Company have helped recover stolen cash and merchandise, cleared innocent employees from involvement in a theft, helped identify employees who had stolen cash or merchandise, assisted in the hiring of individuals who would probably not have been hired and helped identify job applicants who would represent a risk to the company.

(1) In this case, an employee managed to steal money from one of our stores in a manner that she believed would cause another employee to be blamed for the loss. It did not concern this employee that another individual could end up losing her job as a result of this person's actions. Without the use of a polygraph, I do not know how we could have cleared the innocent employee and identified the guilty worker.

(2) In this case, an employee admitted during a polygraph to having stolen $2,200 worth of merchandise. As a result of this finding, the California Probation Department required this individual to repay the company as part of probation requirements. Without the polygraph, we would not have been able to clear the innocent employees or recover the value of the stolen merchandise.

(3) In a pre-employment interview, a polygraph of this applicant revealed deception on several questions. When asked about this after the test, she stated that her husband was a burglar who specialized in jewelry stores, and that the ring she was wearing (which contained approximately a 1.5 carat pear shaped diamond) had been stolen by her husband. Again, the polygraph proved instrumental in averting what could have been a disastrous situation.

(4) One of our stores suffered an inventory loss and we brought in a polygraph examiner to interview those employees who had no objection to being interviewed. During one examination, an employee admitted to having taken items valued in excess of $1,000 from the store. One of the items he had given to his wife as a gift and another he had sold. Without the use of a polygraph, we would not have been able to determine that this person was responsible for these thefts and there is little reason to believe the thefts would not have continued.

(5) During a specific polygraph, an employee admitted that he had stolen numerous items, including a $1,500 ring. Further questioning revealed deception on whether he had told us about all the merchandise he had stolen. Without the use of a polygraph, we would not have been able to identify the guilty individual and clear the other workers from suspicion. In this particular case, we probably would have had to make major changes in staff in an effort to stop the thefts.

(6) In this case, an employee was requested to take a polygraph after suspicion was raised that she had been responsible for the loss of a man's diamond ring from our inventory. The discovery occurred when she took the stolen ring to one of our other stores to get it sized. An employee at the other store began questioning this individual and asking for information about the date of purchase and the price. When the answers did not make sense, the employee alerted our security department. A subsequent polygraph conducted on the suspected employee led to a confession that she had stolen the ring in question.

(7) In this case, one employee accused another of stealing merchandise from us. When we polygraphed employees in the store we were able to determine that the accused was innocent of the charges. However, the polygraph revealed deception with respect to the employee who had made the charges. Later, that employee confessed to stealing merchandise.

(8) On numerous occasions we have been able to hire individuals who we otherwise would not have been able to hire without the use of polygraphs. An example of this occurred when we discovered that a previous employee had stolen $650 in merchandise from us. Through the use of a polygraph we were able to determine the circumstances surrounding the theft and were convinced that it was an isolated incident. As a result, we were able to rehire that individual.

(9) In this incident, we were missing money from a cash sale of a diamond ring. Interestingly, while we were unable to determine what happened to the money, we were able to clear all of the people who were working in the office of any guilt. Again, without the polygraph we probably would have had to terminate those workers who seemed most likely to be involved.

(10) This employee admitted during a polygraph to have taken certain merchandise for which she had not paid. Through proper questioning, we were able to determine that this was the extent of the merchandise she had taken and that it was not her intent to permanently deprive the company of the value of the merchandise. We were also convinced that this did not represent a normal pattern for this employee but rather a one-time situation. Based on the information developed from the polygraph we decided to allow this individual to make restitution and continue as one of our employees. This person is still employed by us.

§§ 9100 to 9221. Repealed by Stats.1978, c. 1416, p. 4677, § 4, operative July 1, 1981

Section 5 of Stats 1978, c 1416, p 4677, provides

"Section 4 of this act shall become operative on July 1, 1981, unless a later enacted statute deletes or extends such date"

Prior to repeal the listed sections were amended as follows

Sections	Amendments
9105	Stats 1979, c 801, p 2764, § 1
9115	Stats 1976 c 1188, p 5355, § 54
9116	Stats 1976, c 1188 p 5356 § 55, Stats 1978, c 1416 p 4677, § 1
9125	Stats 1975 c 1023, p 2415, § 2
9162	Stats 1975, c 1023, p 2415, § 3
9220	Stats 1975, c 1023, p 2416, § 5.

Section 9101.1, added by Stats 1975, c 1023, p 2415, § 1, defined "Inspector-in-training"

Section 9161.5, added by Stats 1978, c 1416, p 4676, § 2, related to authorization to engage in functions and use title of registered construction inspector

Section 9205 added by Stats 1975, c 1023, p 2416, § 4 related to expiration and renewal of enrollment as inspector in-training

Section 9220.5, added by Stats 1978, c 1416, p 4676, § 3, related to refunds or other disposition funds for examinations not given

Notes of Decisions Under Repealed Sections

SECTION 9220.5

1. In general

This section and § 9221, relating to the disposition and use of fees collected from construction inspectors constitute a continuing appropriation of the funds in the construction inspectors registration board fund for the support of the state board of registered construction inspectors 63 Ops Atty Gen 125, 2-15-80

SECTION 9221

1. In general

Section 9220.5 relating to refunds for failure to conduct examinations for construction inspectors and this section constitute a continuing appropriation of the funds in the construction inspectors registration board fund for the support of the state board of registered construction inspectors 63 Ops Atty Gen 125, 2-15-80

CHAPTER 17.6. POLYGRAPH EXAMINERS

Article		Section
1.	General Provisions	9300
2.	Application of the Chapter	9303
3.	Administration	9304
4.	Licenses and Regulation	9305
5.	Fees	9320

Chapter 17.6 was added by Stats 1983, c 1107, p ——, § 1.

Repeal

Chapter 17.6 is repealed by Stats.1984, c 1210, p —, § 14.5, urgency, eff Sept 17, 1984, operative Jan 1, 1989

ARTICLE 1. GENERAL PROVISIONS

Section
9300. Short title.
9301 Purpose of chapter, liberal construction
9302 Definitions.

Article 1 was added by Stats.1983, c 1107, p ——, § 1.

Repeal

Article 1 is repealed by Stats.1984, c 1210, p —, § 14.5, urgency, eff Sept 17, 1984, operative Jan 1, 1989

§ 9300. Short title

This chapter shall be known and may be cited as the Polygraph Examiners Act

(Added by Stats.1983, c 1107, p ——, § 1.)

Library References
Licenses ⚷39 39
C J S Licenses §§ 59 to 61

§ 9301. Purpose of chapter; liberal construction

(a) It is the purpose of this chapter to regulate all persons who conduct polygraph examinations through the use of instrumentation as defined in subdivision (g) of Section 9302.

(b) The provisions of this chapter shall be liberally construed to regulate all persons described in subdivision (a). No person who purports to be able to determine the truthfulness of statements by use of a polygraph instrument described in subdivision (g) of Section 9302 shall be exempted from the provisions of this chapter because of the terminology that he or she may use to refer to himself or herself, to his or her instruments or mechanical devices, or to describe the nature of his or her services.

(Added by Stats 1983, c 1107, p ——, § 1.)

§ 9302. Definitions

As used in this chapter, unless the context requires otherwise, the following terms have the following meanings:

(a) "Director" means the Director of Consumer Affairs.

(b) "Board" means the Polygraph Examiners Board.

(c) "Person" means any individual, firm, association, partnership, or corporation.

(d) "Intern" means a person licensed under this chapter to conduct polygraph examinations in an internship.

(e) "Internship" means the study of an intern under the supervision of a general licensed examiner in accordance with the course of study prescribed by the director at the commencement of that study.

(f) "Polygraph examiner" means a person who purports to be able to determine the truthfulness of statements through the use of a polygraph instrument.

(g) "Polygraph instrument" means an instrument capable of at least recording visually, permanently, and simultaneously the respiratory, cardiovascular, and galvanic skin resistance patterns.

(h) "Polygraph examination" means the procedure by which a polygraph examiner renders an opinion as to the veracity of statements made by an examinee.

(i) "Secretary" means that member of the Polygraph Examiners Board selected by the board to act as secretary.

(j) "Examinee" means any natural person who voluntarily takes a polygraph examination.

(Added by Stats 1983, c 1107, p ——, § 1.)

Library References
Words and Phrases (Perm Ed)

ARTICLE 2 APPLICATION OF THE CHAPTER

Section
9303 Necessity of license; exemption of federal employees; violation; misdemeanor
9303.5 Effect of chapter on activities of licensed psychologist [New]

Article 2 was added by Stats 1983, c 1107, p ——, § 1

Repeal

Article 2 is repealed by Stats 1984, c. 1210, p ——, § 14.5, urgency, eff Sept 17, 1984, operative Jan. 1, 1989

§ 9303. Necessity of license; exemption of federal employees; violation; misdemeanor

On or after January 1, 1985, no person shall engage in conducting polygraph examinations, refer to himself or herself as a polygraph examiner, or offer or advertise his or her services as a polygraph examiner unless he or she is licensed under this chapter. This act does not apply to any employee of the United States of America while the employee is engaged in the performance of his or her official duties. Violation of this section shall be punishable as a misdemeanor.

No person shall engage in conducting polygraph examinations, refer to himself or herself as a polygraph examiner, or offer or advertise his or her services as a polygraph examiner unless he or she is licensed under this chapter. This act does not apply to any employee of the United States of America while the employee is engaged in the performance of his or her official duties. Violation of this section shall be punishable as a misdemeanor.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 1, urgency, eff. Sept. 17, 1984.)

1984 Amendment. Inserted at the beginning of the section, "On or after January 1, 1985".

§ 9303.5. Effect of chapter on activities of licensed psychologist

Nothing in this chapter shall be construed as restricting, or interfering with, the activities of a psychologist licensed pursuant to the provisions of Chapter 6.6 (commencing with Section 2900) of Division 2, provided the psychologist does not use polygraph instruments except for research or the clinical practice of psychology, or hold himself or herself out as a polygraph examiner.

(Added by Stats.1984, c. 1210, p. ——, § 1.5, urgency, eff. Sept. 17, 1984.)

ARTICLE 3. ADMINISTRATION

Section
9304. Board; director; membership; appointment; term; duties; compensation.
9304.1. Persons appointed to polygraph examiners board prior to Jan. 1, 1985; effect of chapter [New].
9305. Director; polygraph examiners board; membership; appointment; term; duties; compensation; duties.

Article 3 was added by Stats.1983, c. 1107, p. ——, § 1.

Repeal

Article 3 is repealed by Stats.1984, c. 1210, p. ——, § 14.5, urgency, eff. Sept. 17, 1984, operative Jan. 1, 1989.

§ 9304. Board, director, membership; appointment; term; duties; compensation

The director shall administer and enforce the provisions of this chapter.

(a) There is in the Department of Consumer Affairs a Polygraph Examiners Board. The Polygraph Examiners Board shall consist of a total of five members, two of whom shall be polygraph examiners and three of whom shall be public members. Each member shall be a citizen of the United States and a resident of this state for at least two consecutive years prior to appointment. The two polygraph examiners shall have been engaged for a period of two consecutive years as polygraph examiners prior to appointment to the board. The polygraph examiners initially appointed to the board shall become licensed pursuant to this chapter by January 1, 1986, or shall automatically forfeit office, and each polygraph examiner appointed to the board thereafter shall be licensed pursuant to this chapter. One polygraph examiner member shall be from a governmental agency and one polygraph examiner member shall be from the private sector.

(b) The Governor shall appoint the two polygraph examiner members and one public member. The Senate Rules Committee shall appoint one public member. The Speaker of the Assembly shall appoint one public member.

(c) Members of the board shall serve for a term of four years. No person shall serve more than two consecutive terms.

(d) The board may adopt, repeal, or amend such regulations as may be reasonably necessary and expedient for the administration of this chapter. The regulations shall be adopted, amended, or

Asterisks * * * indicate deletions by amendment

repealed in accordance with Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code.

(e) Each member of the board shall receive a per diem and expenses as provided in Section 103.

(f) The vote of a majority of the board members is sufficient for passage of any business or proposal which comes before the board.

(g) The board shall establish a prescribed course of training.

(h) The board shall establish a standard for the instruction of interns.

(i) The board shall prescribe form and content of the licensing examinations. ~~The board shall meet within 30 days after the effective date of this chapter and elect a chairman, vice chairman, and secretary from among its members.~~ When the form and content of the examination is finally prescribed, the board shall specify dates * * * on which examinations for polygraph examiners licenses will be held.

(j) The * * * board * * * shall issue, suspend, or revoke any license.

(k) All proceedings for the denial, suspension, or revocation of a license * * * shall be conducted in accordance with Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code, and the board shall have all the powers granted therein.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 2, urgency, eff. Sept. 17, 1984.)

§ 9304.1. Persons appointed to polygraph examiners board prior to Jan. 1, 1985; effect of chapter

Nothing in this chapter shall be construed to restrict or prevent the appointment of persons to the Polygraph Examiners Board prior to January 1, 1985, or to restrict the activities of those board members in preparing for the administration of this chapter following their appointment, including, but not limited to, the employment of staff, necessary travel, and securing of office premises.

(Added by Stats.1984, c. 1210, p. ——, § 2.5, urgency, eff. Sept. 17, 1984.)

ARTICLE 4. LICENSES AND REGULATION

Section
9305. Intern and general licenses.
9306. Applications; requirements.
9307. Qualifications; examination.
9308. Nonresidents; agent for service of process; procedure for service.
9309. Reciprocity; license without examination.
9310. Duration of license; renewals.
9311. Expired license; renewal without examination.
9312. Expired license; employee of government agency or duty as member of armed forces; renewal without examination.
9313. Refusal to issue or revocation or suspension of license; grounds; allegation of misconduct; investigation by attorney general.
9314. Liability of examiner-employer for unlawful acts of examiner-employee or intern.
9315. Surrender of license upon receipt of written notification of suspension or revocation; reinstatement.
9316. Notification to examinee; requirements.
9317. Equipment; necessity of approval of board.
9318. Display of license; notification of change in principal place of business.
9319. Records; retention.

Article 4 was added by Stats.1983, c. 1107, p. ——, § 1.

Repeal

Article 4 is repealed by Stats.1984, c. 1210, p. ——, § 14.5, urgency, eff. Sept. 17, 1984, operative Jan. 1, 1989.

§ 9305. Intern and general licenses

There shall be two types of polygraph examiner licenses:

(a) The intern license, which permits the holder to conduct polygraph examinations in an internship.

(b) The general license which permits the holder to administer polygraph examinations, other than in an internship.

(Added by Stats.1983, c. 1107, p. ——, § 1.)

§ 9306. Application; requirements

(a) To become an intern, an applicant shall satisfy subdivisions (a) and (b) of Section 9307.

(b) To receive a general license, an applicant shall satisfy subdivisions (a) to (d), inclusive, of Section 9307. An intern shall receive a general license upon satisfaction of subdivisions (c) and (d) of Section 9307. The board shall require such proof as is necessary to establish satisfaction of the additional requirements.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 3, urgency, eff. Sept. 17, 1984.)

1984 Amendment. Substituted "board" for "director" in the third sentence of subd. (b).

§ 9307. Qualifications; examination

Any applicant for a license as a general polygraph examiner shall comply with all of the following:

(a) Have a high school diploma or equivalent.

(b) Have graduated from a polygraph examiner's course approved by the board.

(c) Have completed not less than 200 polygraph examinations, of which 100 shall be "specific" examinations.

(d) Have successfully completed an examination administered by the board.

Any individual meeting the provisions of subdivisions (a), (b), and (c) shall be issued a license unless grounds exist for the denial of the license. Persons issued a license pursuant to this paragraph shall be required to successfully pass the examination administered by the board within 12 months of the date of issuance of the license.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 4, urgency, eff. Sept. 17, 1984.)

1984 Amendment. Inserted, at the end of the introductory paragraph, "comply with all the following"; deleted former subd. designation (e); and rewrote the final paragraph, formerly subd. (e), which read "At the time of enactment, any individual meeting the provisions of subdivisions (a), (b), and (c) shall be granted a license and shall be required to successfully pass the examination administered by the board within 12 months of the date of issue."

§ 9308. Nonresidents, agent for service of process; procedure for service

(a) Any person who is not a resident of this state shall include with his or her application for a general license, or renewal thereof, an irrevocable written consent permitting the board to act as his or her agent for the service of all legal process in this state.

(b) In any action in a court of competent jurisdiction in this state, service of process may be made upon a polygraph examiner who does not reside in this state by mailing two registered copies of the process to the secretary. The secretary shall retain one copy of the process in the records and immediately send, by certified or registered mail, the other copy to the polygraph examiner at the most current address as indicated by the records of the secretary.

(Added by Stats.1983, c. 1107, p. ——, § 1.)

§ 9309. Reciprocity; license without examination

The board may grant a general license as a polygraph examiner in this state to a person who is licensed as a polygraph examiner by another state, or territory of the United States, without examination, upon application by that person, if the board finds each of the following:

(a) That the state or territory in which the person is licensed at the date of the issuance of the license by the other state or territory, had substantially equivalent licensure requirements as this state currently has, as determined by the board pursuant to the requirements of Section 9307.

(b) That the state or territory grants similar reciprocity to license holders of this state.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 5, urgency, eff. Sept. 17, 1984.)

§ 9310. Duration of license; renewals

A general license or an intern license shall be valid for a period of two years and shall be renewed by * * * the board, upon evidence that the license holder has successfully completed 24 hours of polygraph training of the kind approved by the board within two years prior to the expiration of the holder's license.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 6, urgency, eff. Sept. 17, 1984.)

1984 Amendment. Substituted "the board" for "the director, upon recommendation of the board" following "shall be renewed by".

§ 9311. Expired license; renewal without examination

A person whose license has expired may obtain a renewal without examination upon application within two years after the date of the expiration of the license, upon compliance by the person with:

(a) Proof of attendance of at least 24 hours of polygraph training approved by the board within the previous two years.

(b) Payment of the required fee for the renewal.

(Added by Stats.1983, c. 1107, p. ——, § 1.)

§ 9312. Expired license; employee of government agency or duty as member of armed forces; renewal without examination

A person whose license has expired while he or she was an employee of any governmental agency or while he or she was on active duty as a member of the Armed Forces of the United States or on active duty as a member of the National Guard of this state may obtain a renewal license, without examination, upon application thereof within two years after the date of his or her termination of such employment or active duty, upon compliance by the person with:

(a) Proof of attendance of at least 24 hours of polygraph training approved by the board within the previous two years.

(b) Payment of the required fee for the renewal.

(Added by Stats.1983, c. 1107, p. ——, § 1.)

§ 9313. Refusal to issue or revocation or suspension of license; grounds; allegation of misconduct; investigation by attorney general

(a) The board may refuse to issue or may revoke or suspend the license of any person as a polygraph examiner or intern on proof the person has done any of the following:

(1) Failed to inform an individual being examined as to the nature of the examination or failed to advise the individual or his or her representative, or the representative of the requesting agency, of the results of the examination.

(2) Failed to inform an individual being examined that his or her participation in the examination is voluntary, except as provided in Section 432.2 of the Labor Code.

(3) Made a material misstatement in his or her application for an original or renewal license under this chapter.

(4) Willfully disregarded or violated any provisions of this chapter or any regulation adopted pursuant thereto, including, but not limited to, the willful making of a false report of a polygraph examination.

(5) Has demonstrated physical or emotional inability or incompetency to carry out the duties of a polygraph examiner.

(6) Has permitted a license granted to him or her under this chapter to be used by another person.

(7) Has willfully aided or abetted any violation of this chapter or any regulation adopted pursuant thereto.

(8) Has failed to provide any information requested by the board after the receipt by the board of a complaint alleging that the person has violated a provision of this chapter or any regulation adopted pursuant thereto.

(9) If the applicant or holder of any license has committed any crime or act constituting grounds for denial, suspension, or revocation under the provisions of Division 1.5 (commencing with Section 475).

(b) Any allegation of misconduct committed, or alleged to have been committed by any person acting as an agent of this state or any political subdivision thereof, shall be referred to the Attorney General for investigation. The Attorney General shall forward the results of the investigation to the board for appropriate action.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 7, urgency, eff. Sept. 17, 1984.)

1984 Amendment. Substituted "board" for "director" in three places; added the exception to subd. (a)(2); and rewrote subd. (a)(9), which previously read: "If the holder of any license has been adjudged guilty of the commission of any felony or any crime involving moral turpitude."

§ 9314. Liability of examiner-employer for unlawful acts of examiner-employee or intern

Any unlawful act or violation of any of the provisions of this chapter on the part of any polygraph examiner or intern shall not be cause for revocation of the license of any other polygraph examiner for whom the offending examiner or intern may have been employed, unless it shall appear to the satisfaction of the board, that the polygraph examiner-employer has willfully or negligently aided or abetted the illegal actions or activities of the offending polygraph examiner or intern.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 8, urgency, eff. Sept. 17, 1984.)

1984 Amendment. Substituted "board" for "director".

§ 9315. Surrender of license upon receipt of written notification of suspension or revocation; reinstatement

Upon receipt of written notification of the suspension or revocation by the board of his or her license, a polygraph examiner or intern shall surrender immediately his or her license to the board. The board may restore a suspended or revoked license to the prior holder thereof, if the board has completed a noticed hearing into the matter, and has voted to reinstate the license.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 9, urgency, eff. Sept. 17, 1984.)

1984 Amendment. Substituted "board" for "director" in three places; and substituted, at the end of the second sentence, "has voted to reinstate the license" for "made a favorable recommendation for reinstatement".

§ 9316. Notification to examinee; requirements

Except as provided in Section 432.2 of the Labor Code, no examination shall be conducted or administered by a polygraph examiner unless the polygraph examiner makes known to the examinee each of the following:

(a) That the taking of the examination is a voluntary act on his or her part.

(b) That he or she may decline to take the examination and the declination shall not be construed to disadvantage him or her in any manner.

(c) The subject matter, or area of inquiry and the questions to be asked during the examination, which questions shall be read aloud prior to the instrumental examination. The person to be

examined may be asked to sign a written statement acknowledging that the requirements of this section have been complied with by the polygraph examiner and may be asked to sign a written statement consenting to the disclosure of the examination results

(Added by Stats 1983, c 1107, p ——, § 1. Amended by Stats 1984, c 1210, p. —, § 10, urgency, eff Sept 17, 1984.)

1984 Amendment. Inserted at the beginning of the first sentence "Except as provided in Section 432.2 of the Labor Code"

§ 9317. Equipment; necessity of approval of board

(a) On and after January 1, 1985, any polygraph instrument used to test or question individuals for the purpose of determining the truthfulness of statements made by the individuals, shall be of the type approved by the board. To be approved, each type of instrument shall record visually, permanently, and simultaneously at least the cardiovascular pattern, the respiratory pattern, and the galvanic skin resistance pattern of each individual. The patterns of other physiological changes of any such individual may also be recorded.

(b) Nothing in this chapter shall be construed to restrict development of improved equipment or techniques.

(Added by Stats 1983, c 1107, p ——, § 1. Amended by Stats 1984, c 1210, p —, § 11, urgency, eff Sept 17, 1984.)

§ 9318. Display of license; notification of change in principal place of business

(a) A polygraph examiner shall prominently display his or her license at his or her place of business or employment, and an intern shall display prominently the intern license at the place of his or her internship.

(b) A polygraph examiner shall notify the board in writing of any change in his or her principal place of business within 30 days after the date of the change. Failure * * * to comply with the provisions of this subdivision shall constitute grounds for administrative disciplinary actions.

(Added by Stats 1983, c 1107, p ——, § 1. Amended by Stats 1984, c 1210, p —, § 12, urgency, eff Sept 17, 1984.)

1984 Amendment. Substituted "board" for "director" in the first sentence of subd (b), and rewrote the second sentence of subd (b), which previously read "Upon discovery by the director of the failure by a licensee to comply with this section the director shall suspend the license of the polygraph examiner."

§ 9319. Records; retention

A polygraph examiner shall retain records of all polygraph examinations for a period of not less than two years.

(Added by Stats 1983, c 1107, p ——, § 1.)

ARTICLE 5 FEES

Section

9320 Accounting, report and disposition of receipts, polygraph examiners fund

9321 Fees, amount

Article 5 was added by Stats 1983, c 1107, p ——, § 1.

Repeal

Article 5 is repealed by Stats 1984, c 1210, p —, § 14.5, urgency, eff Sept 17, 1984, operative Jan. 1, 1989

§ 9320. Accounting, report and disposition of receipts; polygraph examiners fund

The board shall receive and account for all fees and revenues derived from the operation of this chapter, and at the end of each month shall report the fees and revenues to the Controller and shall

pay them to the Treasurer, who shall keep the fees and revenues in a separate fund known as the Polygraph Examiners Fund. Fees and revenues contained in this fund shall be available to the board for carrying out the provisions of this chapter when appropriated therefor by the Legislature.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 13, urgency, eff. Sept. 17, 1984.)

§ 9321. Fees; amount

* * * (a) The amount of fees relating to licensure pursuant to this chapter shall be as follows:

(1) The application fee is fifty dollars ($50).

(2) The initial license fee is two hundred dollars ($200).

(3) The renewal fee is two hundred dollars ($200).

(4) Notwithstanding Section 163.5, the late renewal fee is fifty dollars ($50).

(b) The sum of fifty thousand dollars ($50,000) is hereby appropriated from the General Fund to the Polygraph Examiners Fund, which sum shall be a loan to be repaid to the General Fund with interest at the rate earned by moneys invested in the Pooled Money Investment Account and which shall be repaid during the 1985–86 fiscal year from funds collected pursuant to the Polygraph Examiners Act.

(Added by Stats.1983, c. 1107, p. ——, § 1. Amended by Stats.1984, c. 1210, p. ——, § 14, urgency, eff. Sept. 17, 1984.)

1984 Amendment. Added the provisions of subd. (a); redesignated former subd. (c) as subd. (b); substituted "1985–1986 fiscal year" for "1984–1985 fiscal year" in subd. (b) [formerly subd. (c)]; and deleted the provisions of former subds. (a) and (b), which previously read:

"(a) The director shall establish fees in amounts he or she determines reasonably necessary to provide sufficient revenue for the administration and enforcement of this chapter, but in no event shall the fees be less than fifty dollars ($50) and no more than two hundred fifty dollars ($250).

"(b) There shall be no fee charged for a license, either an intern license or general license, for an individual who is employed as a polygraph examiner by the state or any political subdivision thereof while the employee is engaged in the performance of his or her official duties. Any such employee, however, conducting examinations outside his or her official duties shall be required to pay the same license fee as that required of an individual in the private sector."

CHAPTER 18. CLEANING, DYEING AND PRESSING

ARTICLE 2. ADMINISTRATION

Section
9533.4. Disposal of chemicals; emission standards; rules and regulations.

§ 9530. State board of fabric care; existence; members; compensation

There is in the Department of Consumer Affairs the State Board of Fabric Care, which consists of seven members. * * * The seven members of the board shall consist of four public members and three persons licensed or registered by the board. All board member licensees or registered persons shall have been actively engaged in the drycleaning industry for at least three years and after January 1, 1972, shall have been actively engaged in the drycleaning industry for at least five years. It is desirable that members from the drycleaning industry be so selected that there shall be a geographical balance.

Each member of the board shall receive a per diem and expenses as provided in Section 103.

(Amended by Stats.1976, c. 1188, p. 5356, § 56; Stats.1982, c. 676, p. 2762, § 54.)

§ 9531. Tenure; appointment; oath; quorum; removal of board members; vacancies

Members of the board shall be appointed for a term of four years, and they shall serve until the appointment and qualification of their successor, but in such case no member whose term of office has expired shall serve for a period longer than one year, unless reappointed to the board. No member shall serve more than two successive regular four-year terms.

Vacancies occurring shall be filled by appointment for the unexpired term. Before entering upon the duties of his office, each member of the board shall take and subscribe to the constitutional oath

Is the Real Thief on Your Staff?

(by Mike Schwartz, JC-K associate editor)

Employee theft is not a figment of retailers' imaginations. This form of crime costs American business three times as much as armed robbery and burglary combined, or \$5-\$10 billion in losses annually, according to the National Institute of Justice.

U.S. Department of Commerce figures are even gloomier. The D.O.C. puts 1984 losses as high as \$40 billion vs. a \$33 billion shrinkage loss in 1982 (66% of which was attributed to employee theft). In a survey conducted by Arthur Young & Co., CPAs, retailers attributed about 44% of retail store inventory shrinkage to dishonest employees; 30% to shoplifters; 22% to poor paperwork and 4% to vendor theft.

A Commerce Dept. study conducted in 1983 concluded that about one-third of all workers steal from their companies. At a growth rate of more than 10% a year, Commerce considers the resulting business losses to be at epidemic levels, D.O.C. statistics also show that 30% of all business failures each year stem from employee theft of money, merchandise and property.

Why they steal: Understanding how a thief thinks is vital to developing countermeasures against employee pilferage. The Triangle Theory of Theft—validated in both scientific tests and practical business experience—lists three conditions that must exist for any theft to occur: Need, opportunity and attitude.

Need is a psychological state involving more than just a desire to overcome a lack of money. Challenge, thrill-seeking and a wish for revenge are just a few psychological needs fulfilled by the act of stealing. Then again, a jewelry store employee may feel he or she really needs a diamond ring or watch.

Opportunity is availability of stealable goods plus a belief by the thief he or she will not get caught. An employer can use sensor tags. surveillance equipment and every other trick in the book. But employees usually are the first to figure out ways of getting around these things. Dishonest ones will stand around all day thinking of ways to beat the system. . . sometimes only because they have nothing better to do.

Attitude is the universal feeling among thieves that stealing is acceptable. It is often rationalized with such phrases as "Everyone steals a little," or "I deserve the money," or "The store can afford it." This is the key element of the theft triangle, say experts, especially since most employees have regular opportunities to steal despite management precautions. In the final analysis, it's the person's attitude that determines how he or she will channel needs and view theft.

"Before a person can steal, he has to rationalize the act to justify it in his own mind " says Dr. William Terris, associate professor at DePaul University, Chicago and director of research and development for London House Inc., an Illinois honesty testing firm. "By contrast, the honest employee views himself as a clearly above average person in an essentially honest world. . . and is usually intolerant and punitive toward theft in others. "

Studies indicate that 20% of all employees are inherently honest and will never steal no matter what the circumstances; 15% are unabashedly dishonest and will steal without hesitation. The remaining 65% are normally reliable employes who will abuse the system only if their high standards are compromised. This can be done by the realization that others are doing so without dire consequences, by peer pressure, poor working relationships or physical/emotional exhaustion.

Mr. Martinez. The first question is, is your parents' store still in Bell Gardens?

Mr. Sherwood. Yes, it sure is, and our main offices.

Mr. Martinez. You are a constituent. Or your parents are.

Mr. Sherwood. Yes. Us, too.

Mr. Martinez. You mentioned the return of stolen jewelry. Has there been a national study as to how much money has been returned, or how much stolen property has been returned as a result of the polygraph?

Mr. Sherwood. Unfortunately, not that I know of.

Mr. Martinez. You just know about those instances?

Mr. Sherwood. Well, I know about a tremendous number of incidents. I have laid out in my attachment to the testimony a number of them. I, also, in going through the files, came up with literally hundreds of them that I could provide to the committee if you would be interested in them. But in answer to your question, I don't have any specific numbers.

Mr. MARTINEZ. No. I would be more interested in a study that is done to determine on a national scale how much stolen merchandise——

Mr. SHERWOOD. Well, we do have the Zale numbers—I am sorry, sir.

Mr. MARTINEZ. Pardon?

Mr. SHERWOOD. I said we do have the Zale numbers that I referred to in my testimony.

Mr. MARTINEZ. That might be helpful.

It leads me to the next question. Is there any data showing if thefts increased or decreased in those States that have banned the polygraph?

Mr. KRAHULEC. Mr. Chairman, yes. We have run a controlled study on 15 or 18 of our stores in Massachusetts, which is a complete ban State, and in the Baltimore area, which is a State where we can use it for both preemployment and investigatory. And the percentage of loss of total business was about four times higher in the Massachusetts stores than it was in the Baltimore stores. And that may be somewhat extreme, but we have done comparisons elsewhere with a similar effect. We are convinced that it is definitely a deterrent, especially in the area of the controlled drugs.

I have to also say that we are in the unique position in our industry that the better job that the DEA and the other Federal and State agencies do in the area of illicit or diverted controlled substances, in effect, the worse it is for us. Because we are out there day in and day out with these materials in our safes and on our shelves as a legitimate source, and as the DEA dries up illegal sources in a given city or area, there is increased pressure on internal diversion. And it is something that is an ongoing battle for our industry.

Mr. MARTINEZ. That question, by the way, I asked on behalf of Congressman Henry, who had to leave, but he would have liked to have asked that question. He had one other question. Have the insurance rates for your stock losses gone up in the States that have prohibited polygraph? Does anybody know?

Mr. KRAHULEC. Again, if I may, since we are probably the largest operator. No, not specifically, because it is prorated across our corporate results. And again, we are in 21 States and 1,300 stores, so it is hard to pinpoint an increase based upon a particular polygraph law.

Mr. MARTINEZ. I would like to ask this question of all three of you and have you each respond to it. And I forgot to time myself again. That is all right, I am the chairman.

First, how long have each of you used polygraph?

Mr. KRAHULEC. In our case, it has been in excess of 20 years.

Mr. COLE. As long as I have been in the business, 36.

Mr. MARTINEZ. A long time.

Mr. SHERWOOD. As I stated, we started using them on a regular basis in 1975, but prior to that we were using them on a periodic basis, when we had a specific loss.

Mr. MARTINEZ. OK. Then you have all had long histories of using the polygraph, so you could probably answer this question.

Have people who passed the polygraph test and then subsequently been employed been caught for theft?

Mr. Krahulec?

Mr. KRAHULEC. Absolutely. And that is one of the reasons that the need for postemployment utilization is there. Because, frankly, we have instances, it is not just a 24-year-old pharmacist right out of school who has gone bad during his college days. We are having problems, unfortunately, with a 45-year-old person who is facing his own college tuition payments for his children. The value of these things makes it very attractive to somebody who has been a good employee and for some reason suddenly gets involved or becomes a user themselves.

So, yes, there are many people that get into the system and may subequently develop problems. And it has been found to be very effective in helping, not the sole determinant, but in helping to resolve some of these problems.

As has been pointed out I think in the jewelry store, there are incidents, not just in our company, but where you have repeated inventory loss in the controlled drug area where the only alternative is to release the entire crew or those people who had access to the drugs if they are continuing to get out on the street. And the polygraph in that instance many times can resolve the situation as to the entire store crew, and you start looking elsewhere—delivery people or something.

Mr. MARTINEZ. Mr. Cole.

Mr. COLE. Unquestionably people change. They have been prone to be honest initially. They can certainly be prone to be dishonest at a later date, particularly when they see so much money around.

Mr. SHERWOOD. I would love to be able to say that it is, you know, 100 percent perfect, but I think that we all admit that it is not. But it is certainly a critical tool which we have and which we feel that we really need in our business.

In answer to your specific question, yes, we have had instances where we have hired people and then have found out later that they were stealing from us.

Mr. MARTINEZ. Which leads me to my next question. Supposing that in your polygraph test of an employee the question was asked—have you stolen? He may have stolen as a young college man at one time, and you would find that grounds for not hiring that employee because he has a record of being dishonest. But as Mr. Cole pointed out, people change. This man may now be the most honest individual.

Mr. Krahulec.

Mr. KRAHULEC. That is a very critical question, and it points to the skill of the examiner and the skill and the developing of the questions themselves. I didn't hear a lot about that today. But one of the very important things that we are after is current adult lifestyles. Obviously, a question, other than perhaps to get, in spite of what we heard here from the ex-policeman, it is very important to get meaningful responses to your baseline questions. And there may be, in developing the baseline questions, in the first 25 years of your life, if you are talking to a 40-year-old applicant, did you ever steal anything, to get a true, baseline, noncontrolled response. But the questions—did you ever smoke a cigarette? did you ever steal anything?—are ridiculous. You wouldn't be able to hire anybody.

Another point I think that has to be made for our industry. Our company is going to open probably 130 new pharmacies this year. We need people. We are not using these devices to keep from hiring people. It is ridiculous.

There is a shortage of pharmacists, which, you know, may or may not be something that has come to your attention, and we are trying desperately to get good people into the system because we need them. We are expanding rapidly.

But the questions are not framed, at least in our instance, as far as did you ever * * * a single candy bar, a single theft-type thing. That is not a fair comparison.

Mr. MARTINEZ. Mr. Cole.

Mr. COLE. We do not under any circumstances fail to hire or discharge any potential employee or employee purely and simply based on what their reaction to a polygraph examination might have been.

Mr. MARTINEZ. No. The question was that if a person in answering a question on the polygraph had, in fact, admitted to theft earlier in his life, regardless of how great the theft was, if it was petty theft or something a little more major. But now you have said yourself that people change. Would that be reason for you not to hire that employee?

Mr. COLE. No, sir, it would not.

Mr. MARTINEZ. Mr. Sherwood.

Mr. SHERWOOD. What we are really attempting to do through the use of the polygraph is to try and build a picture of this employee. In our particular business, we will do thorough background checks in addition to the polygraph examination. Much as the issue of the drugs does not prevent us from hiring somebody, I have got incidents. I have got one particular employee where he had worked for us previously and he wanted to come back to work for us about a year later. And when we polygraphed him for reemployment, he admitted to having stolen a $650 diamong ring from us. We sat down and had quite a long and lengthy discussion with him and were convinced through the discussion that it was a one time only thing, that he had been really sorry about it, he agreed to bring the ring back, and everything else—the long and the short is we ended up rehiring the man.

We really are trying to build a picture, if you will, of the employee. We take into account whether the person has stolen from previous employers, whether the person has a major kind of a drug problem, whether the person has got a major kind of gambling habit, what kind of job stability has had—and you try to funnel all of these things together and build a portrait of whether this is a type of person that you want to have employed by you. Then you take an add to that the references that you get from various employers and through that you are able to finally develop a picture of the type of person you are dealing with. And it is based on that entire picture that we will make the determination.

Mr. **Martinez**. OK. I have to ask this last question even though I have gone beyond my time. In each of your instances, do you hire your own polygraphers or do you contract with outside, established polygraph firms?

Mr. Sherwood.

Mr. **Sherwood**. Well, we have had experience with both. We originally were using outside polygraphers and we have since hired an inhouse security director. And our security director, in addition to other things, also does our inhouse polygraphs.

Mr. **Martinez**. So you prepare for him the questions and the lines of questions and the base information you need?

Mr. **Sherwood**. That is correct.

Mr. **Martinez**. Mr. Cole.

Mr. **Cole**. We would not, nor does our policy allow us to, use inhouse polygraph examiners. We employ what we consider to be nonbiased, outside, highly professional individuals to do the work for us.

Mr. **Martinez**. Do you have any input into preparing the base examination?

Mr. **Cole**. Yes, we do.

Mr. **Martinez**. All right.

Mr. Krahulec.

Mr. **Krahulec**. Yes, sir, we have a complete security department. I believe it currently has 18 polygraphers who have been through the various required schools and meet the licensing requirements for the States in which we do business. And we do work with various groups in preparing the baseline questions and the standard exam questions.

Mr. **Martinez**. Thank you.

Mr. Williams.

Mr. **Pat Williams**. Thank you, Mr. Chairman.

Gentlemen, I want to commend each of you for what I find to be reasonable, prudent testimony which demonstrates that you do not use the polygraph as a net to throw over the innocent and guilty alike and then use the results of that test in lieu of using anything else. Obviously your associations do not subscribe to that, and I commend you for that.

There is a western singer called Tom T. Hall, and Hall has a line in one of his songs, and it is "If you hang them all, you'll get the guilty." You, obviously, don't believe in hanging them all, and I commend you for that.

But what I am worried about is some of the ones you are hanging are innocent, maybe only a few. But you see, I believe the gadget doesn't work. And, when you depend upon it, I suspect, as many of your members do, when you depend upon it with considerable exclusivity to any other criteria, some of those you hang are simply not guilty. And I know from your statements that you are concerned about that, and so is this Congress. That is why we have 150 cosponsors on this bill, Members from both sides of the aisle, both Republicans and Democrats. So we are very concerned about it, too. But again, let me commend you for what I think is, in the main, prudent and reasoned testimony.

I hope that we have some evidence that your prudence is not, in fact, put into effect by some of your members. And that is the difficulty we have.

Mr. Krahulec, in your written statement, at the beginning you have a "Fact Sheet, Summary of Statement," and under "Employee Theft in Drug Stores," No. 5, you say "DEA requires all registrants to maintain a comprehensive employee screening program including the use of polygraph testing (CFR title 21 part 1301.90)." I have that section before me. It doesn't say anything about "including the use of polygraph testing."

Mr. KRAHULEC. That is correct, sir, and in my oral testimony I did change that to "encourages." I also have two additional exhibits here that—you were out of the room—where the DEA states in two recent publications that they encourage both for pre-employment and for subsequent investigations the use of the polygraph when it concerns drug loss.

Mr. PAT WILLIAMS. I appreciate that correction.

Let me ask you, you brought some drugs with you. Tell me how you got those.

Mr. KRAHULEC. Well, I had our pharmacy supervisors obtain—knowing that this was coming up, I had our field supervisors as they visited the stores trying to obtain empty containers as they were used up in the store. And we have used them in various States for testimony, also, because I think many of the people who are in good faith trying to regulate what appears to be some abuses in the area don't really realize what we are up against as far as the size and the relevant street value, and the corrupting influence, that a bottle of this size can have on an otherwise good employee.

So they were obtained in the normal course of business as they were used up in our stores.

Mr. PAT WILLIAMS. In this Nation we correctly hold that druggists and pharmacists in high regard, and they have earned that regard.

Mr. KRAHULEC. I hope so. I am one.

Mr. PAT WILLIAMS. I commend you. You have a valued and important profession. There is, of course, some abuse, drug abuse, among druggists and pharmacists just as there is some drug abuse among musicians, prizefighters and Members of Congress.

Does your National Association support the requirement that the druggist and the pharmacist take lie detector tests on a regular basis?

Mr. KELLEY. Mr. Williams, my name is Ty Kelley. I am with the association.

We don't advise our members in that regard. It is up to each individual company to make a determination as to where and when they polygraph. But because of the importance of the issue of drug abuse, it seems that a lot of the activity is directed toward those employees that will be working in and around where the controlled substances are kept. And if we feel that the pharmacist could be the one who has stolen the substances, then I guess the company would zero in their investigation with the pharmacist.

Mr. PAT WILLIAMS. So you neither encourage nor discourage the use of lie detectors for the owners or operators of the store. Then let me understand. Does your association either encourage or discourage the use of lie detectors for employees?

Mr. Kelley. We believe that our members should have the right to utilize the polygraph for both pre-employment screening in terms of identifying potential employee problems, and we support our members' right to use the polygraph and other investigative measures when a major shortage has occurred. That is the position of the association.

Mr. Pat Williams. Thank you, Mr. Chairman.

Mr. Martinez. Thank you, Mr. Williams.

I have a problem with the last statement you made, Mr. Kelley. You believe that the employers have the right to use the polygraph to identify any potential problems that you might have with the employee. That seems a lot broader than trying to find out whether that employee is an honest employee or would not be stealing from you. And it seems to be that the emphasis has been here on the need of the polygraph to determine potential loss through theft.

I mean, when you make that statement that makes it very broad.

Mr. Kelley. Maybe my statement wasn't as clear and concise as it should be. But our members do need to utilize the polygraph along with a wide range of other screening devices for employment purposes. And each company has to make up their own determination whether they are going to utilize the polygraph for pre-employment or investigative matters.

Mr. Martinez. Well, that makes it a little more concise, but it still takes it out of the realm of simply wanting to determine employee honesty for the sake of curtailing theft.

Mr. Kelley. Let me let Mr. Krahulec handle this.

Mr. Martinez. Mr. Krahulec.

Mr. Krahulec. I think some of the confusion, sir, reflects the emotional aspect of this whole issue. We are a large association, as I said in my opening statement. As such, some of our members may not choose to use it, either because they don't believe in it, because they are afraid of lawsuits as has been mentioned previously, for various reasons. Many others I know from experience are part-time users. They don't have, either because of the expense, because of union contracts, perhaps, depending on what part of the country they are in, they might preclude it. They don't have an ongoing program. But when the DEA puts the pressure on them to find out where that bottle of 500 or 1,000 missing tablets is, yes, they go to it as part of the—not the only, but as part of the background investigation into the disappearance.

Some of the companies, like ourselves, like the Revco Drug Co., Jack Eckard down in Florida, are advocates of an ongoing pre-employment and testing program. So within our 172 companies there isn't unanimity, and I guess that keeps the association from having a single statement on the issue. But it is an important aspect of our overall program.

And I think one other thing should be pointed out. It is not just a pharmacy issue. In those 22 States, or 20 States that you cited earlier that have some sort of prohibition, to my knowledge all but three exempt people engaged usually in the manufacture, distribution or dispensing of controlled substances from the prohibition. I think that is critical because they are looking here at doctors' offices, because the doctors dispense out of there, wholesale drug operations, drug manufacturers. So it is more than just a retail pharmacy issue. The pressure is on over the diversion at all levels.

Mr. **Martinez**. Thank you, Mr. Krahulec.

One last—I don't know if it is a question or statement. But Mr. Williams brings up an interesting point when he suggests that maybe there should be a policy of polygraphing owners and supervisors in a company, or managers in a company. The reason being, in my experience as a young man working for a large company in California, the owners were family-oriented people, and they had hired as supervisors and foremen throughout the place of employment their relatives—brothers-in-law, sisters-in-law, et cetera. They had suffered great losses, and they continually blamed the employees. But the employees, in fact, were so afraid to take anything because of relatives working there, constantly in and around the place, that it was actually, in fact, the relatives that were stealing the man blind. But there was never any suspicion of them.

I wonder, if, in those days they had had the polygraph, he would have found that the real culprits would have been those that were doing his supervision for him. I just wonder.

It would seem that if the policy were to polygraph, it would be for all the personnel of the company. Do you have any response to that?

Mr. **Krahulec**. We do, in fact, again, not cavalierly, but if we hire a management level position, one where there is access or involvement in cash, if a person's been with us a 10 years and they weren't polygraphed coming in as a clerk but they are going to be given a position of authority where they will have keys to the store, which means they could conceivably get in there and get out the drugs or whatever, at that point, even after 10 years, they will be asked as part of the procedure for advancement to submit to the polygraph. Same thing in our supervisory positions, all the way up to senior vice president and pharmacy operations, it is part of the promotion aspect.

Mr. **Sherwood**. Number one, I would just like to say that in our company we do polygraph all of our people including our supervisors, store managers, et cetera.

Second, attached to my testimony is a statement from the Zale Corp., and if I may read part of it, it says:

> It is the policy of Zale Corporation to polygraph all of its employees who occupy sensitive positions to include: Chairman of the Board, Corporate President, Group President and other corporate officers.

Mr. **Martinez**. At this point I would like to yield to Mr. Williams.

Mr. **Pat Williams**. Thank you, Mr. Chairman.

Mr. Sherwood, do I understand correctly, then, that the use of the polygraph is throughout your company?

Mr. **Sherwood**. Yes, sir.

Mr. **Pat Williams**. And, Mr. Cole, as I understand it, the same is true with regard to Wells Fargo, the use of the polygraph is companywide?

Mr. COLE. Well, first, we are not an association. I represent three companies here who are involved in very sensitive issues within this Nation.

Yes, we follow the policy of, if the polygraph is used in an instance, and whomever he may be, if he had access to or could have been involved with the incident, he would be subjected to a polygraph examination.

And I might add that I am 64 years old and I have been subjected to a number of them, and I haven't jumped off the bridge yet.

Mr. PAT WILLIAMS. Well, we are glad to find that out.

Mr. Krahulec, I take it the polygraph is not used in every drug store?

Mr. KRAHULEC. No, it is not. It is not cavalier. It is used, again, depending on the position. If the person has access and is likely to be dealing with the drugs or large amounts of cash, then yes.

But there is no periodic, like once a year everybody is polygraphed.

Mr. PAT WILLIAMS. Well, let me address the question to you because what I was trying to do with the three of you was to determine which, if any, of you had elements that you are representing that did not use polygraph, and you, apparently, are the only one of the three that fits that definition.

So, inasmuch as this is a very contentious issue, and I think we would all agree, or perhaps not, but there is significant agreement that, if polygraphs don't violate the Constitution, they really skirt and create some questions among a significant number of American people concerning violation of their right to privacy, concerning testifying against themselves.

Given that fact and because your association, as evidenced by your testimony here, is really very concerned with being prudent on this matter, has your association done any review of the differences between the drug stores which use polygraph and those which do not?

Mr. KRAHULEC. No. And very simply because that is such sensitive information among the member companies. Again, we are individual members operating under the NACDS umbrella. OK? Just like member companies don't trade sales figures, et cetera, they don't trade figures on drug loss. Frankly, I think some of them might be hard-pressed to determine exactly how severe it is, depending on how they inventory. We inventory our stores on an average of approximately three times a year, two or three times a year, and some they do it only yearly. Obviously, our company has a much better handle due to the frequent inventories to monitor the losses.

Mr. PAT WILLIAMS. Well, I am not going to suggest for a minute, your association, how you ought to do business with your members. But I just suggest that this is also a matter of employee rights, and these employees work for your members. And it would seem to me that an association that understood the contention in this issue and supported the rights of their members to use the polygraph, would also be interested in comparative data between those members who use the polygraph and those who do not. Because it seems to me as an association you need to understand which employees are being intimidated, which are really being caught by polygraphs.

I believe, as I said earlier in my testimony, that the day is coming when employees who have had it to the eyebrows with these polygraphs are going to begin to use the courts. And it seems to me that your association and other associations ought to be in the business of gathering as much data as you can to defend yourself before the courts. I suggest that most associations and most employers in this country are now without the defense that you need when employees begin to sue associations and drug stores and polygraph companies for misuse of the gadget.

Mr. KELLEY. May I respond to that? I think you are making some very valid points, and we do try to collect data and information in these areas, particularly on public policy matters. We are currently embarking on a very expensive campaign to attract students to the profession of pharmacy. That is one of the highest budgetary items that the association has right now.

Unfortunately, like any business or company, trade associations have a limited amount of money. And if we did have more money, then we would be expanding our information base and gathering the type of information that you are talking about. We are going to have to look at that in the future and see if we can make some valid comparisons to see if we can measure the difference between one State versus another where the polygraph is not permitted.

Mr. PAT WILLIAMS. Thank you, Mr. Chairman.

Mr. MARTINEZ. Thank you, Mr. Williams.

And thank you all for joining us and giving us your testimony. It is invaluable. We thank you again.

With that, we are adjourned.

[Whereupon, at 12:30 p.m., the subcommittee was adjourned, to reconvene subject to the call of the Chair.]

[Material submitted for inclusion in the record follows:]

PREPARED STATEMENT OF RICHARD D. PATERSON, DIRECTOR OF SECURITY, MCKESSON CORP. ON BEHALF OF THE NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION

Mr. Chairman and Members of the Subcommittee, I am Richard D. Paterson, Director of Security for McKesson Corporation. On behalf of the National Wholesale Druggists' Association (NWDA), I am submitting this testimony opposing H.R. 1524 and H.R. 1924 which would prohibit private industry from using polygraph or written examinations.

The NWDA is the national trade association of full-service drug wholesalers. It represents more than 90 percent of the drug wholesale industry by dollar volume. Its active membership is comprised of 106 drug wholesale corporations which operate more than 340 drug distribution centers nationwide.

Through those centers, billions of dollars of controlled substances are distributed annually to drugstores, hospitals, and medical facilities nationwide.

NWDA believes that drug distributors must maintain the tightest possible security measures, which include polygraph and written examinations, to prevent the theft of controlled substances from drug warehouses.

It is no secret that drug abuse is a national epidemic with virtually no age, sex, or race discrimination. The National Institute of Drug Abuse estimates that crime, lost productivity, and medical expenses resulting from drug abuse, cost our nation $49.6 billion annually.

Given this backdrop of drug abuse, NWDA believes that it makes no sense to say that keeping drug abusers out of drug distribution centers is the same as denying workers job opportunities.

Rather than banning use of the polygraph, we believe that employment opportunities can be better preserved through legislation such as H.R. 1792 that would establish strict standards and protections in the administration of polygraph examinations.

INTRODUCTION

Most pharmaceuticals are distributed through drug wholesalers in the United States. In fact, 90 percent of all controlled substances, including dangerous narcotics, pass through drug wholesalers. Of the $12.52 billion of wholesaler sales for 1984, it is estimated that $8.98 billion was in pharmaceutical products, $1.65 billion in proprietary products, $1.05 billion in toiletries, and $840 million in sundry and miscellaneous goods.

This huge distribution network stretches across the United States with drug wholesalers physically located in all but two states. Wholesalers select and purchase goods and store then in close proximity to the community and hospital pharmacy customer.

They perform a sorting function by concentrating, then dispersing goods in economic quantities, and transporting them to pharmacies.

Drug wholesalers provide other marketing functions including financing in the form of trade credit and value-added services. Among the value-added services provided by drug wholesalers are price and shelf stickers, product movement reports, electronic order-entry, retail accounting services, and pharmacy computer systems. Wholesalers usually offer daily ordering and delivery services.

The wholesaler's largest customer is the independent retail pharmacy. They represent more than 53 percent of the total. Nearly 20 percent of drug wholesaler sales are to chain drug stores; 19 percent to hospitals. The balance is divided among chain drug warehouses, clinics, nursing homes, mass merchandisers, and food stores.

On average in 1984, a drug wholesaler's operating expenses were a lean 6.84 percent with gross margins of 9.39 percent and net margins a scant 1.42 percent. At this profit margin, a drug wholesaler must sell $70.42 in merchandise to recoup the cost of $1 in stolen goods.

Based on a 1985 survey, NWDA found that 80 percent of its members used polygraph examinations. The 20 percent who do not employ polygraph examinations are primarily located in lightly-populated rural areas where family-run businesses and close community ties preclude the need for polygraphs.

DRUG ABUSE HARMS THE WORKPLACE

According to a 1982 survey (the most recent available) by the National Institute on Drug Abuse (NIDA), 21 million Americans used prescription drugs for non-medical purposes during 1982. This survey also estimates that nearly 25 million Americans experimented with illicit drugs during the same period.

According to DEA's Drug Abuse Warning Network (DAWN) statistics, the most heavily abused drugs are of legitimate origin. Of the top 20 drugs most frequently mentioned for 1980 through 1983, 15 were of a type found normally in the illicit market, i.e., in drug wholesale warehouses, pharmacies, and hospitals. These 15 drugs accounted for approximately 350,000 drug-related injuries and deaths from January 1980 to January 1982, while illicit drugs such as heroin and cocaine accounted for another 150,000 drug deaths and injuries. In terms of injuries and deaths, DAWN statistics clearly indicate that abuse of drugs of a legitimate origin is at least equivalent to those of an illicit nature.

Mr. Ronald W. Buzzeo, deputy director for the Office of Diversion Control, Drug Enforcement Administration, recently discussed a report of drug abuse in the workplace[1] at a meeting of the Institute of Nuclear Materials Management. In that report, he noted that as many as six million workers in the United States abuse drugs on a regular basis. He said that other studies show that as many as three to five percent of the employees in any medium to large-sized plant may be dependent on drugs as a way of life. Experts have also established 19 to 36 years of age as the median age range of employees under the influence of drugs. These are frightening statistics considering that many of the individuals go undetected until they are involved in a total or tragic accident. According to Mr. Buzzeo, the drug dependency of these people contribute significantly to the $80 billion price tag paid by the American economy as a result of lost productivity, absenteeism, poor quality control, injuries; ineffective supervision, destructuion of property, and thefts. Compared with the non-drug user, a drug user:

Is at least three times as likely to be involved in an accident;

Has better than two times as many absences lasting eight days or longer;

Receives at least three times the average level of sick benefits;

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[1] "Drug Abuse in the Workplace Employment Screening Techniques", International Drug Report, June 1985.

Is at least five times as likely to file a worker's compensation claim;

Is at least seven times as likely to be the target of garnishment proceedings; and

Functions at about 65 percent of his or her work potential.

Employees who abuse drugs adversely affect the public health and safety. Injuries, pain, and death inflicted on the American public by those who abuse drugs in the workplace must be minimized.

The drug distribution warehouse with fast-moving, complex conveyor belt systems, forklifts, and pallet lifting devices is no place for someone whose senses are impaired by drugs. They are a danger to themselves and others.

DEA REPORTS EMPLOYEE THEFT OF CONTROLLED SUBSTANCES

In this country, any person or firm manufacturing, distributing or dispensing controlled substances, including dangerous narcotics, must register with the Federal Drug Enforcement Administration (DEA) and comply with regulations to assure that controlled substances are not diverted from normal distribution channels. Among the literally thousands of controlled substances are amphetamines and barbiturates ("uppers and downers"), morphine derivatives, and cocaine.

The regulations include specific tight security measures. Despite these measures, employees still manage to circumvent the required controls.

For the period July 1982 through July 1983, total thefts reported to the DEA were 6,721. Nine percent were attributed to employee theft.

From January 1984 to March 1985, a total of 8,861 drug thefts were reported to DEA; 15 percent attributed to employees. Thus, since 1983, the percentage of theft by employees has increased seven percentage points—nearly doubling their involvement.

The DEA estimates that each year employees steal one million dosage units of controlled substances from pharmacies.

Drug wholesales take very seriously their legal responsibility to keep dangerous drugs from being diverted for illegal purposes. We know that the controlled substances diverted from our warehouses will be used to feed the habits of those already addicted and to expose others to drugs, many of whom will be young people. As ethical drug wholesalers it is our goal to assure that our employees will not commit drug security breaches.

WHAT DRUG WHOLESALERS DO TO MINIMIZE DRUG ABUSE AND DRUG DIVERSIONS

Drug wholesalers have found that the best way to provide a drug-free work environment and reduce diversion of controlled substances is to establish and implement standard employee screening procedures.

Among the measures used by most drug wholesalers are:

Extensive pre-employment interviews and written tests;

Thorough background checks with previous employers; and

Carefully supervised polygraphs by licensed examiners.

The Drug Enforcement Administration considers employee screening vital. Regulations state:

"1301.90 Employee screening procedures.[2]

"It is the position of DEA that the obtaining of certain information by non-practitioners is vital to fairly assess the likelihood of an employee committing a drug security breach. The need to know this information is a matter of business necessity, essential to overall controlled substances security. In this regard, it is believed that conviction of crimes and unauthorized use of controlled substances are activities that are proper subjects for inquiry. It is, therefore, assumed that the following questions will become a part of an employer's comprehensive employee screening program:

"Question. Within the past five years, have you been convicted to a felony, or within the past two years of any misdemeanor or are you presently formally charged with committing a criminal offense? (Do not include any traffic violations, juvenile offenses or military convictions, except by general court-martial.) If the answer is yes, furnish details of conviction, offense, location, date, and sentence.

"Question. In the past three years, have you ever knowingly used any narcotics, amphetamines or barbiturates, other than those prescribed to you by a physician? If the answer is yes, furnish details."

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[2] 21 Code of Federal Regulations 1301.90.

In a letter dated July 19, 1985 to NWDA, DEA has reaffirmed its position on the use of polygraph:

"It has been DEA's experience that extreme care is necessary on the part of drug firms, both in hiring and monitoring employees who have routine access to controlled substances. These drugs command an illicit price which is many times their legitimate value, thereby, creating an attractive temptation.

"The polygraph examination, utilized as one aspect of an employer's comprehensive employee screening, monitoring, and investigatory programs for employees with routine access to controlled substances, has proven to be an effective means of determining criminal background, history of drug use, and knowledge of or participation in the diversion of controlled substances. Information obtained as a result of the polygraph examination should be considered as but one part of an overall evaluation of the person's qualifications or continued employment.

"DEA supports the use of the polygraph examination for pre-employment screening and as a subsequent investigatory tool in appropriate cases, provided that it is permitted by state and local laws. Those drug firms which utilize these procedures as part of their comprehensive program to minimize diversion are to be commended."

HOW POLYGRAPH HELPS

The polygraph examination should be used as one phase of pre-employment screening and for internal investigations. When used with other investigative measures previously mentioned, polygraph becomes a vital link in protecting our workplaces and preventing drug diversion. Some examples may help.

A New England drug wholesaler reported that more than 430,000 doses of a very well-known tranquilizer had been stolen from its warehouse by several employees. The drug had been removed in small dosage units over a long period of time to prevent detection. Management eventually detected the loss but was unable to determine who was taking the drug. The state where the drug wholesaler is located had passed a law banning the use of polygraph by private industry. Although state police were exempted from the polygraph ban, their limited resources slowed the investigation. As a result, controlled substances continued to disappear. When finally administrated, the polygraph exam detected a conspiracy and became a vital tool to stop the diversion.

Use of polygraph in pre-employment screening would probably have discovered that one of these guilty employees had lied in his application as was determined during the investigation.

In another case, a salesman for a drug wholesaler was cleared of theft charges. A Georgia pharmacist claimed the salesman stole pills from several large pill bottles. In a verbal interview the salesman denied the charge and volunteered to take a polygraph examination. The polygraph confirmed the salesman's innocence.

A third case involving a Tennessee drug wholesaler resulted in the termination of a truck driver who admitted stealing drugs because of pain from dental surgery. The driver first denied the allegations then admitted taking the drugs when he failed a polygraph examination. He also revealed how he stole pills from so-called tamper-proof bottles. The packaging problem was reported to the manufacturer to make necessary changes to prevent further pilferage.

During 1984, one wholesaler administered more that 1,500 polygraph examinations to individuals applying for jobs in its drug distribution operations. About one in four applicants was not recommended for positions based on polygraph examinations in combination with other pre-employment screening tools. In 90 percent of the cases of those not recommended, the prospective employee admitted during the polygraph examination that he or she had lied in their application about their drug habit or criminal record.

LICENSING REQUIREMENTS RATHER THAN POLYGRAPH BAN

Instead of banning this vital investigative tool now being used by the CIA, FBI, NSA, and—now as a result of the recent House vote of 331-71—the Pentagon, we recommend that the Subcommittee established standards and protections in the administration of polygraph examinations.

We support H.R. 1792 which would prohibit polygraph examiners from inquiring into an individual's religious beliefs, racial background, political or labor affiliations or sexual preferences. These questions are not relevant to the workplace environment or the tendency to commit drug security violations.

Any individual who takes a polygraph examination should be provided a copy of the results if they request. The examination results should have very limited disclosure as outlined in H.R. 1792.

Further, we support the provisions in H.R. 1792 requiring the polygraph examiner to provide the written questions to the individual before the examination and to obtain in writting the consent of the individual to participate in the examination.

SUMMARY

In summary, Mr. Chairman, H.R. 1524 has been cited as the "Polygraph Protection Act of 1985." Ironically, it does not protect drug-free employees who must work side by side with employees who abuse drugs. H.R. 1524 will, in our opinion, facilitate the entry of drug abusers into our distribution centers. Once they are in our distribution centers. H.R. 1524 will help them steal and divert narcotics and other controlled substances without detection. All of American society then suffers the terrible financial, physicial and emotional harm caused by these diverted drugs as they feed addicts and expose others—among them young people—to drugs for the first time.

The key to reducing theft and diversion of narcotics and other controlled substances from drug wholesalers as well as all DEA registrants is thorough screening and background checks on potential employees who may have access to controlled substances. Polygraph plays a vital role.

We hope that Congress will acknowlege the vital role polygraph examinations can play in protecting American society from drug abusers and divertors as it already has acknowledged its importance for the FBI, CIA, and Armed Forces, as well as state and local governments.

A ban on polygraph examinations for our industry would undermine the Federal Government's aggressive campaign against drug addiction and abuse.

Rather than ban polygraph examinations, we hope you will consider enacting legislation that establishes certain standards and protections in the administration of polygraph examinations.

Thank you, Mr. Chairman, for this opportunity to state our concerns about such an important issue. We look forward to working with you and your Subcommittee, as well as other members of Congress to resolve this important issue.

PREPARED STATEMENT OF HON. JIM COURTER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Thank you for providing me with the opportunity to add my views to the permanent record on these polygraph hearings. As a cosponsor of H.R. 1524, the "Polygraph Protection Act of 1985," which was introduced by Representative Pat Williams, I am in favor of prohibiting the use of polygraphs and other so-called lie detectors in private sector employment.

Twenty-two states and the District of Columbia already offer varying degrees of protection to workers from these devices. But the statutes are not consistent in their protection, enforcement is negligible, and the incidence of testing continues to escalate. In my own State of New Jersey, for example, only criminals and individuals handling controlled dangerous substances are legally subject to polygraph testing. In some states, laws only proscribe requiring a test, and not the request to submit to a test. Yet, the result for refusal to take the test is the same—no job.

A study done for Congress by the Office of Technology Assessment in 1983 cited estimates of over one million tests a year now being administered—this despite conclusions, also in this study, that "there is very little research or scientific evidence to establish polygraph test validity in screening situations."

This issue has been before Congress for over a decade. It has been presented as a constitutional issue, a privacy issue, a civil rights issue. It is all of these. But today the devices are being used primarily as a means of employee intimidation, and as a means of screening out employees of political or union beliefs different from those of a particular employer.

The result of this intimidation is that an estimated 50,000 workers per year are wrongfully denied employment either because they refuse to take polygraphs or because of the inherent inaccuracies of the tests.

It is truly sad and unjust that an individual's career goals can be shattered because a device which lacks scientific accuracy determines that he is not being truthful. I don't believe there is any justification for subjecting individuals to what is so often a terrifying or degrading experience, when there is no real evidence to suggest that polygraphs are determinants of professional ability.

The "Polygraph Protection Act of 1985" simply prohibits the use of truth verification devices in the private sector, for both pre-employment testing and testing in the course of employment. It provides for means of effectuating the purpose of the Act, and for remedies as found in the Fair Labor Standards Act as amended. It does not apply to any individual employed by the United States government, nor would it apply to state or local government employees. Other exemptions from the ban which should be examined include private sector defense contractors involved in work which is vital to our national security.

This is not a partisan issue, nor should it be. This is simply a bipartisan effort to remove fear and intimidation from our workplaces, and restore trust and dignity to employment practices.

Thank you again for giving me this opportunity.

State of New York,
Department of Law,
New York, NY, July 30, 1985.

Hon. Matthew G. Martinez,
Chairman, Employment Opportunities Sub-Committee of the Committee on Education and Labor, House of Representatives, Washington, DC.

Dear Representative Martinez: I congratulate you and your Sub-Committee for holding a hearing on the vital issue of the use of employment-related polygraph tests. I am sorry that I am unable to be present, but hope these remarks will be included in the record of the hearing.

In March and April of this year my office held hearings on the use of polygraph tests by employers, a practice increasingly common in New York. My office receives an average of 15 to 20 letters and calls each week from victims. Many of these people have been fired from jobs they performed well for years, simply because they refused to take the test or because they registered stress on the machine. Others are denied employment for which they might otherwise be eligible, for the same reasons.

Callers complain to us day after day that they feel abused, intimidated and humiliated wh en they are attached to the polygraph machine and questioned in an atmosphere rife with coercion. They are outraged at having to answer intrusive and offensive questions about the most personal aspects of their lives or give information they would otherwise only communicate to a religious mentor or close friend. Employees have complained of being questioned at lengthy about their sexual habits, their religion, their relationships with their spouses and families, their debts, their medical problems, their psychiatric history and other highly sensitive topics.

Often polygraphers ask questions which New York State human rights laws prohibit employers from asking: questions about marital status, arrest records, and medical history. The information gained is passed on to employers, where it can result in the very discrimination the human rights laws were intended to prevent.

Young women have been subjected to sexual harassment during lie detector tests. My office is suing a polygraph examiner in Buffalo, New York for allegedly sexually harassing women during polygraph tests they were required to take in connection with their employment or employment applications. Twelve women have signed affidavits complaining of sexual misconduct by this examiner. The affidavits allege that this polygrapher took advantage of his position as the person who could make a favorable or unfavorable employment decision by repeatedly touching the breasts of many of the women, by asking them questions such as: "How old were you when you first had sexual intercourse?", and by making outright propositions to some of the women. One of these women testified at our Rochester hearing about this traumatic experience.

Certain disabilities can affect polygraph test results and we have received complaints from persons who have been discriminated against because of their disability. Some polygraphers refuse to test persons with epilepsy who, because they are untested, may then be denied a job. Other polygraphers will perform the test but refuse to acknowledge that a "failure" of the test may have been caused by the disability or the medication it necessitates.

Some ask: "Why shouldn't employers be able to use the test to control the growing loss of inventory and cash thefts we hear about?" I believe employers should be entitled to use legitimate investigatory techniques to control loss. Polygraph tests, however, invade deep into the personal privacy of workers' lives, and they do not even detect lies.

I am sure you are familiar with the Congressional Office of Technology Assessment study and the five other Congressional studies which conclude that there was no evidence to establish the scientific validity of polygraphs when used for employment screening.

What do these so-called lie detectors really do? They do not distinguish true statements from false ones. They merely measure physiological responses, such as pulse, breathing and heart rate, which merely indicate stress. The machine cannot determine the reason for the stress, which could result from any number of causes. It is the examiner who decides the meaning of the physiological changes on the polygraph chart. Examiners make subjective evaluations that are ineluctably influenced by their own biases and moods. Whether a person passes or fails a test may often depend entirely on who happens to be giving it.

Most employees never learn why they failed the test. Examiners more often than not are secretive about the testing process; they refuse to disclose the areas in which they claim an employee is lying or what they have told the employer about the employee. Employees are powerless to clear their names and records, because they do not know the nature of the accusations against them. The polygraph examiner acts as both judge and jury, and, as employees often complain, they have no right to appeal.

Perhaps the most insidious aspect of the polygraph test is that it never lets go. Over and over again we have heard from persons who, once they have failed a test or refused to take one, are again and again denied employment as each successive interviewer asks: "Have you ever failed or refused to take a polygraph test?"

Many polygraph examiners will admit that there are some abuses but will argue that a system of licensing polygraph examiners is adequate protection and will weed out untrained individuals and those who have perpetrated the worst abuses. I feel that licensing polygraph examiners to screen employees would be a little like licensing crystal ball gazers or tea leaf readers to screen workers. It would give validation to an unreliable and unfair procedure. No matter how schooled and credentialed the examiner, the process itself is not a fair or valid way to decide whether someone can hold or keep a job.

I support the legislation introduced by Congressmen Williams and McKinney which would prohibit all employers engaged in interstate commerce from subjecting employees or applicants for employment to this unjust and degrading process.

Thank you for holding this hearing and allowing me to relate the experience of New York employees with polygraph tests to your Sub-Committee.

Very truly yours,

ROBERT ABRAMS, *Attorney General.*

NATIONAL RETAIL HARDWARE ASSOCIATION,
Indianapolis, IN, August 6, 1985.

Hon. MATTHEW G. MARTINEZ,
Chairman, House Employment Opportunities Subcommittee, House Education and Labor Committee, House of Representatives, Washington, DC.

DEAR MR. CHAIRMAN: The National Retail Hardware Association, a trade organization comprised of 18,000 members including many of this country's major home centers, is strongly opposed to legislation (H.R. 1524-H.R. 1924) before the Employment Opportunities Subcommittee that would ban the private sector use of polygraphs for employment purposes. Instead, NRHA supports as an alternative, H.R. 1792, offered by Rep. Butler Derrick which would regulate the polygraph industry.

A sampling of our membership reveals that the introduction of polygraph testing has helped to: reduce employee theft, clear innocent workers of suspicion, and recover stolen merchandise. It is the policy of some of our members to request that prospective employees take a polygraph test. In addition, it is common for these establishments to polygraph test in shortage situations as well as on a periodic basis. I would stress that our members use polygraphs to obtain significant employment information and not to pry into an individual's personal life.

NRHA maintains that, if properly regulated, the polygraph is an effective way for a retailer to control mounting losses from internal theft. Our association believes that laws governing polygraph use in the private sector should be left to individual states, subject only to federal standards regulating the polygraph industry, which is an approach embodied in Rep. Derrick's bill, H.R. 1792.

Sincerely yours,

RICHARD H. LAMBERT,
Managing Director.

PREPARED STATEMENT OF AMERICAN WATCH ASSOCIATION

In this statement, the American Watch Association expresses its opposition to legislative proposals—H.R. 1524 and H.R. 1924—to ban private sector use of polygraph tests for employees and prospective employees. The Association supports effective restrictions on polygraph testing as enumerated in legislation by Representative Derrick—H.R. 1792.

The American Watch Association (AWA) is a trade association of approximately 40 United States companies engaged in the importation, assembly and manufacture of watches and watch movements for sale in the U.S. and world markets. AWA members include the great majority of major companies in the U.S. watch industry, companies that sell both inexpensive and higher priced watches. AWA members include the firms which market such well-known brands as Armitron, Baume & Mercier, Bulova, Casio, Citizen, Concord, Corum, Ebel, Hamilton, Helbros, Jaz, Lasalle, Longines, Lorus, Marcel, Movado, Omega, Piaget, Pulsar, Rado, Rolex, Ronds, Seiko, Swatch, Universal Geneve, Wittnauer and many others.

THE WATCH INDUSTRY IS VULNERABLE TO CRIME

Polygraph testing has been a necessary and invaluable procedure by which companies in the watch industry have been able to protect against theft, fraud and product loss. The industry is especially vulnerable to such crimes because watches are the archetypal product subject to theft:

Watches are often of high value.

They are highly marketable.

They are easily concealable and difficult to trace.

It should not be surprising that an industry, which frequently must use armored trucks to transport shipments of watches, has little alternative to using polygraph testing for employees who are exposed to watch inventories. From top executives to salespersons and service technicians, polygraph testing is an effective means of preventing or detecting crime of a product that is almost as fungible as money.

The travelling sales representative is a prime example of the exposure of the watch industry to crime. Salespersons typically cover a broad geographical area and must travel with a representative sampling of their company's product line. They cannot rely on photographs nor on the less expensive goods to impress their customers. As a result, sales representatives often are entrusted with an inventory worth more than $100,000. "Entrusted" is the key word because companies cannot travel alongside of the salesperson. And every year, there are a number of instances where a sales representative reports that his product case was stolen.

Polygraph testing cannot completely eliminate an employee's succumbing to temptation, especially where tens and hundreds of thousands of dollars worth of watches are concerned. However, watch companies are convinced such testing has been effective in reducing the incidence of crime, both in preventing it through the evaluation of prospective employees and in deterring thefts through the accurate detection of those crimes that do occur.

In this regard, polygraph testing has proved a necessary practice in holding down inventory losses and, in turn, the cost of insurance for watch companies. Without polygraph testing, these are costs that would increase and would be passed on to the retail customer.

POLYGRAPH TESTS ARE THE MOST EFFICIENT DETERRENT TO CRIME

The watch industry cannot do without an effective screening process to curb the danger of theft. Polygraph testing, if banned by the enactment of H.R. 1524 or H.R. 1924, would have to be replaced by other employee evaluations. Without the protection of polygraph testing, watch companies would have to resort to previous work records, arrest and conviction records, credit checks and personal investigations permissible under the Fair Credit Reporting Act and other Federal statutes.

However, these alternative evalulations are often ineffective, costly and time cosuming. Former employers, increasingly wary of potential defamation of character lawsuits, are loathe to report more than a person's term of employment. And personal investigations often involve irrelevant information that may well erode the privacy rights that the members of the Subcommittee seek to foster.

Ultimately, a ban on polygraph testing reduces the ability of employers to evaluate a prospective employee in order to decide whether or not to hire him or her. It is important to emphasize that watch companies are not looking for excuses to reject new employees; by contrast, they are seeking to hire good reliable people to make the companies grow. Polygraph testing is a useful tool to that end.

The value of polygraph testing in job creation and employment stability is even more obvious when used to detect and prosecute thefts that have occurred. Polygraphs permit watch companies to pin-point the offender and, at least as important, to exonerate the innocent. Ban polygraph testing and watch companies would have to resort to ineffective or draconian methods. The logical remedy for a series of thefts, absent polygraph testing, would be to discharge all suspected employees and replace them with new people. That consquence is the antithesis of the stated objectives of H.R. 1524 and H.R. 1924; but it would be an inevitable result.

CONCLUSION

The U.S. watch industry needs to be able to use polygraph testing to deter crime. Watch companies use such tests to determine, as much as possible, relevant employment information. They have no interest in, nor have the money to waste on extraneous matters such as an individual's sexual preferences, religious beliefs, or affiliation with any labor organizations. Moreover, they use fully professional testers for no other reason than to obtain the most valid, reliable evaluation results possible. Again, it is vital to stress that watch companies want to employ good people and are looking for reasons to accept, not reject, them.

Accordingly, the AWA recommends enactment of H.R. 1792, sponsored by Representative Butler Derrick, or some similar measure to regulate persons who administer polygraph tests.

Thank you.

Prepared Statement of the Multi-Housing Laundry Association

The Multi-Housing Laundry Association (MLA) appreciates the opportunity to testify for the record on H.R. 1524 and H.R. 1924, bills which concern use of polygraphs by businesses in interstate commerce. We strongly oppose these two bills, which would place unreasonable restrictions on our members' ability to protect themselves from employee theft—a problem to which our industry is particularly vulnerable.

To provide the proper context for our comments, we provide a brief description of our industry. The multi-housing laundry industry operates laundry facilities in all types of multi-family residences. The industry's members, known as "route operators," purchase and install laundry room equipment, collect the coins paid into the machines, and service the machines. In exchange for the right to operate the laundry room, they provide the owner of the housing with a substantial portion of the gross income received.

Virtually all of the route operators' income consists of the coins placed in laundry machines located in buildings that are frequently scattered over a large area. The coins must be collected, brought to the route operator's office, counted, separated into units of appropriate size, and taken to a bank for processing and deposit. At every step, particularly the first two, route operators are extremely vulnerable to theft. They are even more vulnerable than other businesses that deal in cash, such as retailers, because collection takes place at far-flung, unsupervised sites where it is virtually impossible to monitor the actions of the collecting employee.

Our members must use effective methods of controlling employee theft. The very survival of their businesses depends on this. Also, their contracts with the housing owners require that the owners receive a certain percentage of the income collected, and our members need to assure these owners that their share is not being unreasonably reduced due to theft. Finally, route operators need to assure the IRS that they are paying tax on their actual income—not an income figure that is drastically reduced by employee theft.

In order to deal with these complex problems, many of our members use polygraph tests as one way of controlling theft. Tests are most frequently used as a tool to screen job applicants, and some route operators also use polygraph tests as a periodic check on their employees. As a pre-screening tool, the tests are used almost exclusively to test prospective employees for problems relating to theft—a history of theft from prior employers or of shoplifting, for example. Some operataors also use the tests to check for other problems that could significantly affect job performance—a history of drug or alcohol abuse, for example. Finally, some route operators use polygraph tests to check the accuracy of responses on the written applications.

We would like to make several points about our members' use of polygraph tests. First, particualrly in the pre-screening context, they are only one tool of several that route operators use to evaluate the reliability of employees and prospective employees. Most operators use detailed written applications, which include employment history and references. They also interview the applicant extensively without use of the polygraph. In other words, route operators use the polygraph as a supplement to, rather than a substitute for, traditional methods of screening job applicants.

Second, our members do not use polygraph tests as a means of invading employees' privacy. They do not inquire into such matters as religious or political beliefs, or sexual preference. In fact, many operators specifically tell the examiner not to touch on certain topics at all during the interview, and if information on one of these topics is discovered inadvertently, not to mention it to the operator or include it in the written report.

Third, our members recognize the importance of using reputable, highly-trained examiners and state-of-the-art equipment. As a typical example, one of MLA's officers uses the president of the state polygraph association as his examiner.

Our members have found polygraph tests to be a very helpful tool, particularly in screening job applicants. in general, applicants are informed before the first interview that a polygraph test will be administered later in the hiring process, and this leads to a full and frank interview in which prior incidents with employers or law enforcement agencies are dislcosed. In some cases, the decision not to hire is made at that point. In other cases, the applicant explains extenuating circumstances involved in the prior incident, the explanation is confirmed by the polygraph, and the applicant is hired. In a third group of cases, problems are not disclosed during the initial interview, but the polygraph test discloses potential problems that are explored through a further interview. In some instances, the problem is a very minor one—a misunderstood question, for example—whereas in others the problem is sufficiently serious that the applicant is rejected.

Our members believe that their pre-employment screening process is so effective that the great majority of their employees are very reliable. However, in order to cover all contingencies, some route operators use periodic polygraph tests as an ongoing check and deterrent. In some cases, instances of theft have been uncovered. Polygraph tests have also been used to exonerate employees who were unfairly accused.

Thus, for the members of our industry, polygraph tests are an effective tool[1] which they use in a responsible and fair way. We are therefore most concerned that H.R. 1524 and H.R. 1924 would forbid our members to use polygraph tests. H.R. 1524 would impose a flat prohibition of use of polygraph by any business in or affecting interstate commerce. H.R. 1924, while its prohibitions are not stated in as clear or emphatic terms, would have the same result.

These two bills ignore what our members know to be true from their own experience—namely, that when used for proper purposes by a qualified examiner, polygraph tests are very useful employment tools that do not invade privacy.

Our members would not object to a bill that placed reasonable regulations on the use of polygraph tests. While we believe strongly that such regulation should be left to the states, we note that a bill currently pending before the House Judiciary Committee, H.R. 1792, takes a much more reasonable approach than the two bills under consideration by this committee. Its avowed purpose to regulate these tests and prohibit invasions of privacy "while permitting employers to use such examinations to protect their businesses and control property losses attributable to employee theft and other acts of misconduct." The bill would set minimum standards for the equipment used in testing, and impose safeguards designed to protect privacy and inform employees of their rights. While H.R. 1792 is not a perfect bill, we urge this Committee to study it approach carefully and contrast its with the much more draconian approach of H.R. 1524 and H.R. 1924.

In summary, when they are used properly and fairly, polygraph tests are a valuable tool for American business. They provide important protection from losses due to empolyee theft. If their use is prohibited there would be severe financial consequences for the multi-housing laundry industry. We urge this Committee to take no further action on H.R. 1524 and H.R. 1924.

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[1] Unfortunately, we do not yet have industry-wide statistics available that demonstrate in terms of dollars the reduction of theft due to polygraph testing. However, we would be happy to provide the Committee with statistics and examples from individual members of our industry.

POLYGRAPHS IN THE WORKPLACE: THE USE OF "LIE DETECTORS" IN HIRING AND FIRING

WEDNESDAY, SEPTEMBER 18, 1985

House of Representatives,
Committee on Education and Labor,
Subcommittee on Employment Opportunities,
Washington, DC.

The subcommittee met, pursuant to call, at 2 p.m., in room 2257, Rayburn House Office Building, Hon. Matthew G. Martinez (chairman of the subcommittee) presiding.

Members present: Representatives Martinez, Hawkins, Williams, Hayes, Atkins, Gunderson, Jeffords, and Henry.

Mr. Martinez. We are holding a hearing today. On July 30, we received testimony on the use of polygraph. Representatives represented both sides of the polygraph issue. Since that time I have been contacted by additional witnesses, and as chairman of the subcommittee, and in an attempt to be fair and objective, and to give people an honest day in court, we are going to hold another hearing today, before the regular markup meeting.

The two witnesses that we will be hearing from today are my colleague, Mr. Livingston, and Mr. Larry Talley, vice president of risk management for Days Inns.

Mr. Talley and Mr. Livingston, will you come forward, please?

STATEMENT OF HON. ROBERT L. LIVINGSTON

Mr. Livingston. Thank you, Mr. Chairman.

I appreciate your giving us the opportunity to get some additional testimony in the record on this bill. I see Mr. Williams is here; it is his bill. I just happen to have a different viewpoint and believe, on the basis of some 6 years as a prosecutor in three separate agencies, that the polygraph is a useful device, and can actually save a lot of heartache, not only for employers, but also for employees.

The fact of the matter is that, as I say, I did work 6 years in prosecution, as an assistant U.S. attorney, assistant district attorney, and assistant Louisiana attorney general. I had access to the use of a polygraph in all three capacities. There were instances when we administered a polygraph to prospective defendants, and made the decision to go ahead and prosecute them.

But by the same token, there were instances when we administered a polygraph to a prospective defendant and decided not to prosecute.

So, my point is simply that a polygraph assists the person to whom it may be administered, if, in fact, he is telling the truth, just as it might work against him, if it determines that he is not telling the truth.

And so it is, I think, that frankly, if this bill were passed, you would be depriving private enterprise of a utility, of a tool, of a device that it genuinely needs, and is genuinely effective. And I think they estimate between 85 and 95 percent effective, to screen out those employees, or those prospective employees who really should not be on the job at a particular place.

You know, a lot of cases are brought in the court system, so it is said that our court systems are clogged because we have so many people who are charged criminally, go through the criminal justice system, ultimately, some of them even go to jail.

Well, it seems to me that we ought to be in the business of lessening that load. We ought to be in the business of trying to reduce the clog in the courts, and by utilizing the polygraph, we can do exactly that. It seems to me that if we allow private industry to use all the tools at their disposal, that are available through modern technology, that indeed they will be able to screen out those people who might end up being disloyal, or dishonest employees, and thereby, avoid problems with having to take them through the judicial system, after they have turned out bad.

I think it is a very useful device. Frankly, though I really have to question what role the Federal Government has in getting into this business in the first place, it seems to me that here we are, going through an episode within the last 12 months, involving spy scandals, not only in the United States, but throughout the Western world, particularly in West Germany. And those spy scandals might not have ever come to light, they might not have even taken place—those spies may not have ever gotten in places of high security, had more polygraphs been utilized by agencies in which clearances were required, in order to screen out those people who have not shown themselves to be worthy of those high security clearances.

So, we are advocating right now that the Federal Government utilize the polygraph more often and try to screen out those people who are security risks for positions of high authority in the Federal Government. And yet, at the same time, we find ourselves discussing a bill that will prohibit private enterprise from utilizing that same device. That doesn't really make sense to me. And I think that the Federal Government ought best let this matter die.

And I would like to submit my testimony for the record in its entirety, if that would be all right, and ask to revise and extend my remarks.

Mr. Martinez. With no objection, so ordered.

[The prepared statement of Hon. Robert L. Livingston:]

Prepared Statement of Hon. Robert L. Livingston, a Representative in Congress from the State of Louisiana

I would like to thank the committee for giving me the opportunity to present my views on H.R. 1524 introduced by Mr. Williams of Montana concerning the use of polygraphs in the private sector. After serving more than six years as a prosecutor in my State of Louisiana, I have extensive experience in using the polygraph exam. It proved to be a valuable investigative tool in my work as deputy chief of the criminal division, in the U.S. attorney's office, as chief special prosecutor for the local district attorney's office, and as chief prosecutor for the organized crime unit of the Louisiana attorney general's office.

I voted with 332 of my colleagues in favor of legislation introduced by Bill Young of Florida to expand the use of polygraph testing to assist our Federal intelligence gathering agencies in protecting our national security. I believe that it would be a mistake for the House to commend the polygraph for the Government's use while condemning it for the private sector. Over the past two decades, the Congress has passed hundreds of bills requiring business and industry to protect the health and welfare of their customers and the communities in which they operate. We require them to accept this responsibility, and we give citizens the right to take them to court if they violate it.

But, if we were to approve H.R. 1524, we would strip many businesses of an important tool they need to protect the public. For example, up to a million doses of legal drugs vanish from pharmaceutical company inventories each year, with the potential to kill or cripple their users. Without the polygraph, this industry loses a valuable tool it needs to help protect its inventories and to ferret out internal theft rings.

There are hundreds of other examples of other businesses that need the polygraph to conduct their own internal investigations and to assist them in hiring honest, trustworthy personnel who will help their employer to carry out its responsibilities to customers.

Child care centers, nuclear facilities, and banks are just a few of the private facilities that entrust their customer's health, welfare, and resources to employees. These businesses need the polygraph to help select appropriate employees and to help find out when thefts and abuses occur.

The business or industrial manager serves as the first line defense in protecting the public from abuses of products and services. It is in the employer's interest to monitor his or her inventories and personnel to detect and correct problems before they cause more extensive damage. Although we see numerous cases in which employee errors and theft cause their companies to be brought before the courts, there are many, many more which never reach the courts because the company management was able to correct the abuse or theft by its own internal investigations. It is best for the company, for the courts, and for the public for the employer to find and correct these problems internally.

The polygraph's accuracy has been shown in study after study to be between 85-95%. This is why we want our intelligence gathering agencies to use it. In Louisiana, there were numerous instances in which we used the polygraph to help us in our criminal investigations. In fact in the space of six years during which I served in law enforcement, I can truthfully say that I never experienced any doubt in the usefulness of the polygraph, and in several instances charges were actually dropped because of a defendant's performance on a polygraph.

Just as polygraph results are inadmissible as evidence in court, I do not believe that employers should use the test results as the sole criterion in making a decision about an employee. I understand that this is also the opinion of most polygraph examiners and of the American Polygraph Association.

It is, of course, in everyone's interest that the polygraph results be as accurate as possible. A number of States, Louisiana among them, have passed legislation which establish guidelines for training and licensing of polygraph examiners, set requirements for the equipment used in the test, and institute protections for the rights of those taking the exam. If the Congress were to pass legislation governing the use of polygraphs in the private sector, it would seem to me to be much more responsible for us to pass legislation modeled on that which I just described than to simply outlaw the use of the polygraph. However, I really fail to see any purpose in the Federal Government's involvement in this matter at all!

We are going to continue to require the private sector to look after the public's interests, and I believe it is important that business and industry have the tools they need to do this job. The polygraph is one of these tools. I urge the committee to reject H.R. 1524 and to consider instead passing legislation which requires responsible use of the polygraph in the private sector so that everyone can benefit from its results.

Mr. MARTINEZ. Mr. Talley.

STATEMENT OF LAWRENCE W. TALLEY, CHAIRMAN, GEORGIA STATE BOARD OF POLYGRAPH EXAMINERS, VICE PRESIDENT OF RISK MANAGEMENT, DAYS INNS OF AMERICA, INC., VICE PRESIDENT-PRIVATE, AMERICAN POLYGRAPH ASSOCIATION

Mr. Talley. Mr. Chairman, thank you for the opportunity to appear here today.

My name is Lawrence Talley, and I am vice president of risk management for Days Inns of America, which operates 425 hotels and motels nationwide. I also serve as vice president-private of the American Polygraph Association. In addition, I am chairman of the Georgia State Polygraph Examiners Board, which is appointed by the Governor of the State. This board regulates polygraph examinations and licenses polygraph examiners in the State.

In 1984, I worked very closely with members of the Georgia General Assembly in drafting a law which is considered to be a model for the Nation.

I have seen countless instances in which the polygraph has been invaluable to both employees and employers. Therefore, I oppose outlawing the use of the polygraph in the private sector, as H.R. 1524 and 1924 would do, but I do support legislation which would provide strict guidelines for examiners and strong protections for the rights of the examinees.

I believe that guidelines for examiners and protections for examinees are essential to protect both employees and employers. I also believe that it is the responsibility of the States to enact and enforce such legislation. States have the constitutional right and duty to regulate the businesses and industries that provide goods and services to their citizens. They license doctors and dentists, insurance and real estate brokers, utility companies, and numerous other trade and professional groups. The States are accepting this responsibility and, to date, at least 30 of them have passed legislation regulating the use of polygraph examinations and licensing of polygraph examiners.

The right of the States to govern themselves should be respected. Legislators throughout the country are working to develop legislation which: protects the rights of those taking the examinations; establishes training and educational guidelines for examiners; sets guidelines for the type and quality of equipment used during the examination, and restricts the types of questions asked during the examination. Questions would be prohibited involving political or religious beliefs, or affiliations, opinions involving racial matters, or sexual preferences, and beliefs, affiliations, or lawful activities regarding unions, or labor organizations.

In my professional career, I have had an opportunity to gain extensive experience with the use of the polygraph. I believe it is an important investigative tool. In my opinion, Congress acted correctly when it voted 333 to 71 to support expanded use of the polygraph in protecting national security. The directors of our Government's intelligence agencies, such as the Naval Intelligence Agency and the National Security Agency, have said that the polygraph is a legitimate investigative tool that is valuable in helping them to carry out their mission. American business also needs this tool to carry out its responsibilities to protect the health and welfare of millions of American consumers, as well as to protect billions of dollars in company and stockholder assets.

In 1975, Mr. Chairman, my own company was experiencing internal losses which amounted to over $1 million annually. By instituting a loss prevention program, which uses the polygraphy technique, we have been able to reduce those losses to an average of $115,000 a year. While losses have been reduced to about one-eighth of the 1975 figure, company revenues have tripled. We also have experienced more than $1 million in restitutions made by employees.

At Days Inns, the polygraph has shown such positive results over the last 10 years, employees readily volunteer to take polygraph examination when a question of honesty occurs. The polygraph identifies more honesty and dishonesty, and exonerates honest employees who are wrongly accused of misconduct on the job.

Besides the polygraph's value in protecting employees, customers, and company assets, many American businesses use the polygraph to prescreen persons they are considering hiring. This helps them to select employees who will have a special responsibility to the public, such as day care centers, who must be especially careful in screening personnel involved in child care; banks where 84 percent of losses are attributed to internal theft; nuclear facilities, whose employees have access to lethal and valuable substances.

In my own industry, the lodging industry, courts across the Nation are awarding huge punitive damages against hotels for improperly screening employees who commit crimes against guests.

In addition, the Nation's pharmaceutical manufacturers, distributors, and retailers have an important responsibility to protect their products. The Drug Enforcement Administration, which endorses the use of polygraphs, says that half a million to a million doses of legal drugs vanish from inventories each year. These legal drugs can be twice as lethal as illegal drugs. The DEA says that 350,000 Americans are killed or injured each year by legal drugs which are improperly or illegally consumed. This compares to 150,000 who die, or are injured each year from using illegal drugs.

From the standpoint of the consumer, the polygraph is an important tool in controlling prices. The National Association of Chain Drug Stores estimates that consumers pay 10 to 15 percent more for goods because of internal theft. The polygraph helps in isolating those few employees who violate their employers' trust, enabling businesses to control losses and therefore costs.

The polygraph also protects the many honest employees who may be accused, or implicated in a crime, but who have no other way to prove their innocence than by taking a polygraph examination. I have seen many instances where employees were wrongly accused, often by fellow employees, of crimes that they did not commit. The willingness of these accused employees to take a polygraph to prove their innocence has shown that they, too, respect its value.

Even though the polygraph is considered to have an 85 to 95 percent accuracy rate, the polygraph profession strongly discourages employers from using the test results as the sole basis for employment, or continued employment. The polygraph is a valuable investigative tool that should be used in conjunction with other methods to gauge an employee's honesty.

The polygraph's value has been demonstrated to me repeatedly, and I hope that I have been able to convey to the committee some of my respect for its usefulness.

Over the past 15 years, at least 100 studies have been conducted by scholars, scientists, and polygraph practitioners concerning the accuracy of the polygraph technique. Based upon a responsible reading of these results, the polygraph has been shown to have an accuracy rate of 85 to 95 percent.

I believe that the Office of Technology Assessment, in its 1983 report, distorted its results by using inaccurate statistical methods. We encourage a repeat of that study to present a more realistic picture of the polygraph's accuracy. In 1984, the Department of Justice issued a report titled "The Accuracy and Utility of Polygraph Testing." We believe this report is more thorough than the OTA study.

Last year, there were widely publicized hearings in the State of Georgia concerning polygraph legislation. At the time, fewer than 10 individuals came forward from across the State with complaints alleging polygraph abuse, in spite of the thousands of polygraph tests that are given every year. At the time of those hearings, I challenged the American Civil Liberties Union to document its claim that the ACLU is inundated with complaints about polygraph abuse. I am still waiting for that documentation.

I appreciate the opportunity of testifying today and will be happy to provide the committee with data supporting any of the points that I have made.

Whether protecting customer trust, company assets, or employee integrity, many American businesses have found the polygraph to be a valuable tool. I believe in the accuracy of the polygraph, and I support the right of American business to have the same access to this investigative tool that the Federal Government has.

Further, I believe that the authority to regulate polygraph examinations and the licensing of examiners should be within the States.

Thank you, Mr. Chairman.

[The prepared statement of Lawrence W. Talley follows:]

PREPARED STATEMENT OF LAWRENCE W. TALLEY, CHAIRMAN, GEORGIA STATE BOARD OF POLYGRAPH EXAMINERS

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I believe that guidelines for examiners and protections for examinees are essential to protect both employees and employers. I also believe that it is the responsibility of the states to enact and enforce such legislation. States have the Constitutional right and duty to regulate the businesses and industries that provide goods and services to their citizens. They license doctors and dentists, insurance and real estate brokers, utility companies, and numerous other trade and professional groups. The states are accepting this responsibility and, to date, at least 30 of them have passed legislation regulating the use of polygraph examinations and licensing of polygraph examiners.

The right of the states to govern themselves should be respected. Legislators throughout the country are working to develop legislation which: Protects the rights of those taking the examinations; establishes training and educational guidelines for examiners; sets guidelines for the type and quality of equipment used during the examination; and restricts the types of questions asked during the examination. Questions would be prohibited involving political or religious beliefs or affiliations, opinions involving racial matters or sexual preferences, and beliefs, affiliations, or lawful activities regarding unions or labor organizations.

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Besides the polygraph's value in protecting employees, customers, and company assets, many American businesses use the polygraph to pre-screen persons they are considering hiring. This helps them to select employees who will have a special responsibility to the public, such as: Day care centers, who must be especially careful in screening child care personnel; banks, where 84% of losses are attributed to internal theft; and nuclear facilities, whose employees have access to lethal and valuable substances.

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I appreciate the opportunity to testify today and would be happy to provide the Committee with data supporting any of the points that I have made.

Whether protecting customer trust, company assets, or employee integrity, many American businesses have found the polygraph to be a valuable tool. I believe in the accuracy of the polygraph, and I support the right of American business to have the same access to this investigative tool that the Federal government has. Further, I believe that the authority to regulate polygraph examinations and the licensing of examiners should be with the States.

Mr. MARTINEZ. Thank you.

We are going to have to break to make a vote, and Congressman Livingston also has to make that vote. I would say to you, if you want to come back to answer any questions, you are welcome.

Mr. Talley, would you stick around, because we probably will have some questions?

Mr. TALLEY. Yes, sir.

[Recess.]

Mr. MARTINEZ. We are reconvened.

I had a couple of questions for Congressman Livingston—you might be able to answer one of them. Do you believe that workers should have some protection against the abuse of a polygrapher?

Mr. TALLEY. Yes, sir, Mr. Chairman, I do. And I think it is very evident by the way that I helped in the drafting of the Georgia legislation, which for the first time across the States, it does build in protections for the people taking the examination. As a matter of fact, we are the only State in the Nation that uses a universal consent form for a person to take a test. And this consent form sets out the type of questions, the limitations, it tells them that they may terminate the test at anytime.

The law states all questions must be reviewed in advance. It tells the person if they feel that the polygraph test is being administered improperly, that they have a right to file a complaint with the State licensing board, which we will investigate thoroughly.

It also says that they have a right to a written copy of their examination, and all the opinions of the examiner concerning that test.

So, I do believe, Mr. Chairman, that people should have certain rights when they go in to take a polygraph examination.

Mr. MARTINEZ. From your testimony and statements you just made, especially the one regarding the licensing of polygraphers, indicates to me that you have a feeling that not all polygraphers are infallible, and that the machine is only as good as the ability of the polygrapher himself. And that you feel that there was a necessity, at least in Georgia, to license polygraphers.

Do you feel that this should be done on a national basis, No. 1; and No. 2, since you have the feeling of the necessity for polygraphers to be licensed, is there a feeling in the back of your mind, maybe, that the results of all polygraph tests are not conclusive?

Mr. **Talley**. First, Mr. Chairman, let me say that if you look at any profession—I don't know any profession that is not infallible, and certainly not the polygraph profession. I do believe on the accuracy of the examination, I think I said in my testimony that I do not support that an employee should lose a job—excuse me, not considered for employed based solely on the results of the examination. If there was other evidence present, if a person came in to take an examination, sir, and he had made admissions to thefts from former employers, and a drug problem, and various other activities of that nature, then that information should be considered as to hire or not hire a person, not solely the results of the test itself.

Mr. **Martinez**. Do you feel that if the test results showed negative on a particular individual, he should have the right to appeal?

Mr. **Talley**. Yes, sir, if that is the only results present, if there was a negative examination, he should be given an opportunity to either take another examination, or the employer should investigate further, as we do in Days Inns, to see what may be causing the results. And if we feel there is nothing in the background—and we have hired many people based on the facts of the outcome of our background investigation.

I do believe, like in any profession, sir, that we are trying to upgrade the polygraph profession by passing strict licensing requirements at the State level. I would support Federal guidelines to be issued for the States to follow in setting up that type of criteria for the States to follow.

Mr. **Martinez**. Mr. Williams.

Mr. **Williams**. Thank you.

We appreciate the testimony and good counsel of our friend and good colleague, Congressman Livingston, and also your good testimony, Mr. Talley.

I understand, having done it myself, that Bob Livingston couldn't return to be with us for more time. But I would like to have said to him that I think his notion of using an instrument which its proponents admit has a 15-percent error rate—to use that instrument to help unclog the busy court system is a little to utilitarian for my definition of justice in the United States. If I am right, that's what he asked that we do, is use this machine to help unclog the courts. I am not supportive of that.

Both Congressman Livingston and Mr. Talley have suggested that national security ought to be a concern, and that even if polygraphs aren't 100 percent accurate, that we need to maybe go the extra yard and admit them to those instances where they could be useful in protecting the national security. And I can assure Bob Livingston, and you, too, Mr. Talley, that all 160 cosponsors of this bill share your concern, as I do, about going the extra yard, short of trampling on civil liberties, in order to protect America's national security. And we are going to try to do that.

And, finally, with regard to Congressman Livingston's remarks about States rights. I believe in States rights. I think we have to follow the Constitution when it comes to protecting States rights. His question was well why would the Federal Government enter this issue?

Well, throughout history there have been those instances where the States bump up against each other, and this is one of those instances. Eleven States have outright bans, but they find the bans don't work, because the chain operation operating within that State simply have the employees cross the closest State line where polygraphs aren't prohibited, take the test and then come back into work in the prohibited State.

That is the genius of the Federal system, it is able to override the abuses inherent in States rights. It is the genius of the Federal system, and that is what we attempt to do here.

Now, Mr. Talley, your testimony, and it is good testimony, you've had made some good selling points, but you rely upon what many proponents of the polygraphs rely upon in your supporting logic, and that is, for example, on page 4 of your statement, you say, "The polygraph protects the employees"—and I am going through it quickly —"The polygraph protects the employees who may be accused or implicated in a crime and have no other way to prove their innocence," there's the point. That is the point of all of this, that turns American's traditional justice system on its head.

No American has to prove their innocence.

Do you see the point? The polygraph requires you to prove your innocence. That isn't the American system of justice. We do it the other way, thank heavens. We require that someone prove your guilt. And the polygraph turns that notion on its head, and that's the primary problem with it, or certainly at least one of the major problems. And I think, perhaps, the primary problem.

Mr. Talley, you go on in your statement to say "The polygraph identifies more honesty than dishonesty" and it might, but that isn't the way we do it in America. We don't require people to identify themselves as honest.

I am surprised your employees are standing in line to prove their honesty. You have an unusual set of employees. Are they standing in line, can't wait to be strapped in?

Mr. TALLEY. Mr. Williams, I don't believe that was my testimony. I believe I said that when acts of dishonesty do occur, and in any place of business, employee theft problems is a serious problem facing the American businesses. Some $40 billion a year estimated by the Department of Commerce occurs due to employee thefts.

My testimony said that when we have acts of dishonesty that do occur in our company, put yourself in the shoes of that employee now, sir, when we operate a hotel, for instance, that might be missing $1,000 from our unit safe, and four or five of those people had accessibility to that safe. A cloud of suspicion, no matter how, sir, you say the system works, is that a cloud of suspicion is over all those people, all of those people are under that cloud.

So, what the polygraph has done, and because of the confidence level that our employees have seen, how we use it in our company, they readily do come forward and say, "The way to clear this situation up and relieve this cloud of suspicion as to my honesty, is I will agree to take a polygraph examination."

I think that is what we are missing here, is that that is a very positive use of the technique, when administered properly by competent, trained examiners.

Mr. WILLIAMS. But it is a misuse of our traditional system of justice, in which employees do not have to step forward and prove they are honest.

Mr. TALLEY. Sir, my only reply to that, Mr. Williams, is that here, again, we provide a workplace for employees to come to work, and certainly one of the things that—a respect that they should have is the rights that we have to make a fair profit in our businesses. And when people steal money from our businesses, employees, it definitely affects not only the employees who have to depend on pay raises our company gives, or benefit packages that we offer, or bonuses that we offer, but it also affects the consumer that we are out selling our product to.

Mr. WILLIAMS. Thank you.

Mr. MARTINEZ. Thank you, Mr. Williams.

Mr. Henry.

Mr. HENRY. I want to thank you for your testimony, and say that I am one who has really been struggling over this issue, which I also faced at the State legislative level, and I am sure some of the others have also. We are still waiting for some information the staff is working on for the committee.

Over and over again we hear about the savings that retailers have in your case, in the service industry. And yet the documentation we are trying to get hasn't shown itself. Does the value of the polygraph show itself in lower shelf prices? Does it show itself on lower insurance premiums, this kind of thing?

We are trying to get that information. We have nothing to demonstrate that it does, nor anything to demonstrate that it doesn't at this point.

My concerns on the other hand are in going too far, and limiting the proper use of polygraphs. We have had testimony, which was pretty strong, demonstrating the misuse of the polygraph. And I don't think that is questioned. The problem is whether those misuses are to such a degree that we ought to prohibit its use entirely, which is really what the bill does.

Thank you.

Mr. MARTINEZ. Thank you, Mr. Henry.

We thank you for your testimony here today, and I am sure that we will be taking another submission as we consider the bill.

At this time I would like to adjourn the hearing, and reconvene in the markup session.

[Additional material submitted for the record follows:]

GARDEN CITY, NY, *August 6, 1985.*

Congressman RAYMOND McGRATH,
203 Rockaway Avenue,
Valley Stream, NY.

DEAR CONGRESSMAN McGRATH: I am writing to you on behalf of my client, Interstate Cigar Co., Inc. of Westbury, New York who is a major promotional wholesaler in drugs, (pharmaceuticals), drug paraphernalia and beauty aids, which employs approximately 500 people.

The purpose of this letter is to voice their opposition to proposed legislation (HR1524) introduced by Rep. Pat Williams (D-MT) banning the use of polygraph examinations by firms engaged in or affecting interstate commerce. We have been advised that the measure is pending before the House Educational Labor Sub-committee on Employment Opportunities which is shared by Rep. Matthew Martinez (D-CA). Further, it is anticipated that the Sub-committee will hold additional hearings.

As currently drafted, the Williams bill will prohibit polygraph examinations and would also ban the use of other types of written integrity testing. Although the National Association of Chain Drug Stores has written to Chairman Martinez requesting an opportunity to testify at the hearing, Inter-state believes that its position should also be heard.

Interstate has, for a number of years employed the use of pre-employment screening through the use of polygraph testing. The test is voluntary insofar as the prospective employee is concerned. The polygraph test is administered by a qualified polygraph examiner whose questions do not involve any inquiries into sex, religion politics or other personal areas of the individual's life other than the use of drugs and debt involvement. Interstate firmly believes that the polygraph is an essential pre-employment test in order to provide a reasonable basis for screening prospective employees.

The employment application which contains many of the pertinent questions is checked out by the Personnel Department and the prospective employee is then given an oral interview and questions are directed as to his or her use of alcohol, injuries, the use of drugs, involvements with law enforcement agencies and the extent of drug involvement.

Upon receiving answers to those questions, the polygraph examiner then reads to him or her a series of questions which are orally discussed that would require a "Yes" or "No" answer. After that is conducted, the polygraph test is administered to the individual. The combined time involved in the initial interview and the testing by polygraph is no more than 30 minutes.

Upon the results of the polygraph, the pre-employment interview, review of the application and certain other checks, recommendations are made to management as to whether this individual is one that should be employed by the company. It is the position of Interstate that absolutely none of the prospective employees' civil rights are violated by such a proceedure and that to deprive companies of this essential "screening tool" would be much to their prejudice and detriment.

We respectfully request your support of Interstate's position in the House and in the Senate and request further, that interstate be given the opportunity to air its views before the Sub-committee at its next scheduled hearing.

Thank you again for the time you have taken to consider our views.

Respectfully,

STANLEY R. GOODMAN.

[Whereupon, at 2:47 p.m., the subcommittee was adjourned.]

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